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**HEALTH AND WELL-BEING IN WORK IN MERTHYR TYDFIL:  
A BIO-PSYCHOSOCIAL APPROACH**

**Well-being in Work Stage 2: Final Report**

**March 2008**

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## GLOSSARY

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A & E	Accident and Emergency
CBI	Confederation of British Industry
CHS	Corporate Health Standard
CMO	Chief Medical Officer
DDA	Disability Discrimination Act
DH	Department of Health
DWP	Department of Work and Pensions
E	Employee (qualitative study)
GP	General Practitioner
HCW	Health Challenge Wales
HSE	Health and Safety Executive
I	Interviewer (qualitative study)
IB	Incapacity Benefit
JSA	Job-seekers' Allowance
LA	Local Authority
LHB	Local Health Board
LLTI	Long term limiting illness
LSOA	Lower Super Output Area
NG NHS Trust	North Glamorgan NHS Trust
NHS	National Health Service
NPHS	National Public Health Service
M	Manager (qualitative study)
MLM	Multi-Level Modelling
MTCBC	Merthyr Tydfil County Borough Council
QoL	Quality of Life
RCT	Rhondda Cynon Taf
SME	Small and Medium Enterprises
WAG	Welsh Assembly Government
WCfH	Wales Centre for Health
WHWR	Wales Health Work Report
WiW	Well-being in Work

## EXECUTIVE SUMMARY

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### Background

The WiW research focuses on the relationship between health, well-being and work in the context of Merthyr Tydfil in the South Wales Valleys. The WiW Partnership was formed to implement the recommendations of the Wales Health Work Report <sup>1</sup>, which was commissioned by the Welsh Assembly Government (WAG) and Department of Work and Pensions (DWP) to investigate new ways of addressing the adverse impact of health inequalities and social exclusion on work. The WHWR recommended that the impact of health on work should be made a major research priority. While this research needed to be informed by an evidence-based framework, it was important that it be of practical utility and of demonstrable benefit to the people of Wales at a community level.

The WiW initiative aimed to implement the recommendations of the Wales Health Work Partnership report through a programme of research, completed in three distinct stages:

- Stage 1: Profiling the community of Merthyr Tydfil
- Stage 2: Investigating the impact of health on work using a multi-method interdisciplinary approach
- Stage 3: Developing work retention and rehabilitation interventions based on evidence gathered during Stages 1 and 2.

Stage 1 of the WiW research was completed in March 2006, setting the socio-economic context and providing the baseline for the project <sup>2</sup>. This report relates to Stage 2 of the WiW research, which focused on investigating how health impacts on work, and exploring challenges in and facilitators of remaining at work with health problems or returning to work after a period of sickness absence. In this report, the WiW Stage 2 research is presented and findings are discussed in terms of relevance to theory, policy and practice.

### Well-being and work in Merthyr Tydfil

The WiW Stage 1 Report <sup>2</sup> describes Merthyr and its environs as ‘an archipelago of islands’; as the region is made up of a number of smaller communities with variation between them in their demographic characteristics and levels of socio-economic deprivation. Nonetheless, Merthyr Tydfil is amongst the most deprived communities in Wales in terms of child and working-age poverty. Deprivation is also evident in relation to health, employment and income. Along with five other local authorities in the Valleys (Neath Port Talbot, Merthyr Tydfil, Blaenau Gwent, Caerphilly, RCT and Torfaen), the proportion of children who are

living in income poverty in Merthyr Tydfil is in excess of 30 per cent. In Gurnos, for example, only 37% of the population are in employment and over 13% of the population have never worked. A higher proportion of the population in Merthyr are claiming IB and the duration of time which people have been receiving benefits is longer than in Wales overall. In two-thirds of the wards in Merthyr more than 25% of the population are in receipt of state benefits.

Despite these challenges, there are a number of opportunities for improving health and prosperity in Merthyr Tydfil. There is significant ongoing regeneration of the area and commitment from key stakeholders in achieving improvements in this community - several of whom are members of the WiW partnership. The WAG policy context also provides opportunities for change, particularly the *Heads of the Valleys Partnership*, *Health Challenge Wales* and *Corporate Health Standard* initiatives. Key UK-wide policies also provide a robust context in which to improve health and work in Merthyr Tydfil, including the Green Paper, *A New Deal for Welfare: Empowering people to work*<sup>3</sup>, *Health Work and Well-being: Caring for our future*<sup>4</sup> and *'Securing health together: A long-term occupational strategy for England, Scotland and Wales'*<sup>5</sup>. The WiW research seeks to encompass the goals and aspirations evident in contemporary policy developments emanating from the UK government, the Welsh Assembly Government and local initiatives.

## **The burden of pain**

The original focus of the WHWR was on musculoskeletal disorders, which were identified as a major problem for health and work in Wales that needed to be better understood and managed. As the WiW initiative has evolved, the project has been extended to encompass other common health problems, including mental health complaints. However, musculoskeletal complaints remain the focus of the project. As part of the Stage 2 research, a literature review was carried out on the burden of pain in economic terms and its impact on quality of life.

Quantifying the burden and cost of chronic pain is challenging due to its multi-factorial nature and wide-reaching effects. This, along with differences in the methods employed and populations studied results in wide variations in estimates of its prevalence and economic costs. Nonetheless, there is a consensus that chronic pain has a significant impact on resources across society and on quality of life. Estimates of the prevalence of chronic pain range from 8% to 60%, with, for example, the indirect cost associated with back pain alone estimated to cost £10.7 billion (US\$16.4 billion) in 1998 using the human capital approach<sup>6</sup>. It has also been estimated that primary care management of patients with chronic pain accounts for 4.6 million appointments per year in the UK, equivalent to 793 whole time GPs, at a total cost of around £69 million (US\$105.6 million), with poor efficacy the trigger for almost as many consultations as poor tolerability<sup>7</sup>. In the UK, the two health



conditions most clearly associated with receipt of Incapacity Benefit (IB) are musculoskeletal disorders and mental health problems. These disorders comprise more than 50% of sick certification and although their diagnostic accuracy may be questionable, they are undoubtedly influenced by social and cultural factors.

Pain has a major impact on labour market participation, affecting performance and productivity and being one of the major reasons why people exit labour markets prematurely, with highly significant impact for employers and benefits agencies alike. The estimates of the economic burden associated with pain fail to do justice to the extent of suffering and reduced quality of life experienced by sufferers, especially those whose condition becomes chronic. The rationale for early and effective interventions is apparent, but the evidence-base of the effectiveness of early interventions in retention and rehabilitation contexts and in targeting risk factors for prolonged pain remains somewhat inconclusive<sup>8-10</sup>. It is evident that further work is required. Despite the high impact of pain on individuals and society, it is contended that pain and its management do not appear to feature prominently in UK government health policies and priorities.

## **Health, well-being and work**

This report includes a review of the literature on how health impacts on work and the evidence base for worker- and workplace-centred rehabilitation and work retention interventions. The relationship between well-being and work is complex and multi-factorial. Disability and incapacity for work as a result of health complaints is poorly explained by the traditional bio-medical model and is better understood from a bio-psychosocial perspective<sup>11</sup>. Remaining at work or returning as soon as possible can be beneficial to people with health problems; it improves recovery and health outcomes, reduces the negative social, psychological and physical effects of long-term sickness absence, and reduces poverty<sup>12</sup>. While work in general is thought to be beneficial for health and well-being, work varies widely in its nature and quality<sup>12</sup>, and there is evidence that work stress is associated with mental disorders<sup>13</sup>. There is a consensus that in general the risks of worklessness by far outweigh any risks associated with work<sup>12</sup>, but in advocating work as being beneficial there is a responsibility on the part of politicians, scientists and employers alike to ensure that work is as positive an environment as possible for health and well-being. Further research is required to achieve this.

Health problems can adversely impact on work in a number of ways, which can broadly be categorised under the headings of absenteeism and presenteeism. Absenteeism can be defined as absence from work through ill health; it is the very lowest level of occupational performance. Presenteeism can be defined as being in work in spite of illness. Sickness absence costs the British economy an estimated £13 billion each year<sup>14</sup>, although the quality and accuracy of available data on absence and sickness absence is variable<sup>14 15</sup>. The

economic costs of presenteeism can outweigh those of absenteeism, and there is increasing interest in understanding this phenomenon<sup>16 17</sup>. Brouwer et al.<sup>18</sup> investigated the relationship between absenteeism and presenteeism and found that 25% of absentees experienced a loss of productivity before their absence and 20% after absence. This demonstrates that absenteeism and presenteeism are intrinsically linked and should be considered in relation to one another. Research on presenteeism is still in its infancy, particularly in the UK, and little is known about its effects in circumstances where people are not well enough to be at work or are not appropriately supported in the workplace. Improving our understanding of this phenomenon is likely to be of central importance in reducing the impact of health on work.

The drivers of absenteeism and presenteeism are likely to be complex and multi-factorial. The illness flexibility model<sup>19</sup> postulates that *attendance requirements*, the negative consequences of absence for the employee (e.g. impact on work tasks or colleagues), and *adjustment latitude*, the opportunities to work despite illness (e.g. moderations to work), act as 'push and pull' factors in determining sickness absence and attendance behaviour. Perceptions of work, including clarity of roles, job demands and control, and the quality of relationships and support are related to sub-optimal work performance<sup>20</sup>. These perceptions of work are often potentially modifiable and may therefore be useful targets for worker- and workplace-centred interventions that aim to improve well-being in work and reduce the impact of health on work.

The Flags Model can be useful in conceptualising risk factors for disability and incapacity for work<sup>21</sup>. It assumes that an adequate understanding of the problem requires consideration of both the health problem and the individual's social and occupational context. The distinction is made between clinically focused Flags (Red, Orange and Yellow) and occupational Flags (Blue and Black). It also distinguishes between the individual's perception of the work situation and the objective features. Furthermore, from the perspectives of return to work and work retention, there is a distinction between factors focused primarily on individuals' perceptions of work (Blue Flags) and organisational obstacles and general considerations of employment, primarily beyond the control or influence of the individual worker (Black Flags). Many of these risk factors are potentially modifiable and there is evidence that both worker- and workplace-centred interventions can be effective in reducing the impact of health on work.

## **The WiW Stage 2 research**

The high impact of health problems on work, particularly mental health and musculoskeletal complaints, is evident in terms of absenteeism, presenteeism and long-term worklessness. This has serious implications for individuals in terms of their quality of life and has wider effects for employers, health services, government agencies and society

as a whole. Reducing the impact of health on work could therefore have wide-reaching benefits. This is particularly so in Merthyr Tydfil, where a high proportion of the population faces multiple disadvantages in relation to health and work. Disability and incapacity for work are multi-dimensional problems and interventions that aim to reduce the impact of health on work are likely to require a multi-faceted joined up approach.

Stage 2 of the WiW research set out to investigate health, well-being and work in Merthyr Tydfil using the Flags Model as a conceptual framework, with regional and organisational context considered as an integral part of understanding these issues. In order to establish how health impacts on work and identify potential for interventions to improve well-being in work, this research focused on employees of major organisations in Merthyr Tydfil. A mixed methods approach was employed to establish how health impacted on work performance and absence and to investigate the role of potentially modifiable psychosocial factors that moderated this relationship. Stage 2 centred around two projects; a quantitative longitudinal employee survey and a qualitative study using both focus groups and semi-structured interviews.

### ***Study 1: Employee survey***

573 employees participated a questionnaire at baseline, the majority of who were female (73%) with a mean age of 41.06 (SD: 10.85). 64% went on to complete 6-month follow up and 51% the 12-month follow up questionnaires. The survey included measures of health and well-being (Red, Orange and Yellow Flags), objective and perceived characteristics of work ('Blue Flags'), and sickness absence and presenteeism were the key outcome measures. The organizational context was also investigated to identify 'Black Flags'. Multivariate hierarchical regression analysis was used for the baseline data, and Multi-Level Modelling (MLM) was carried out on the longitudinal data.

### **Cross-sectional analysis**

The baseline analysis revealed a high prevalence of common physical and mental health problems in the workforce, with 86% of respondents reporting one or more health complaints over the last month. Common health problems have a high prevalence in the general population and in primary care <sup>22-26</sup>, and this is by no means unique to these organisations or to this region. The survey indicated that these problems impacted on performance as well as absence, but the way in which physical and mental health problems impacted on work was slightly different. The health complaints that are typically considered to be more 'physical' such as colds, flu and pain had a greater effect on absence, while a higher level of impact on performance was reported for common mental health problems (e.g. fatigue, stress, problems with mood). This study adds to the growing body of

evidence on presenteeism in demonstrating that using absence as a marker for impact of health underestimates the effect of health on work.

Correlational analysis revealed that perceived and objective characteristics of work, subjective health and well-being, and absence and performance were inter-correlated, demonstrating the complexity of the relationship between health and work. Multivariate regression models were built to establish the statistically independent effects of these variables on absenteeism and presenteeism. The four key outcome variables were: number of days sickness absence over the last 12 months, spells of sickness lasting over a week in the last 12 months, self-rated work performance, and presenteeism (measured by the SPS-6). Statistically significant models emerged for each of these outcome variables (all  $p < 0.001$ ). Variables that independently predicted variance in the outcome measures are shown in Table 1.

**Table 1. Independent predictors of absenteeism and presenteeism in multivariate regression analysis**

Outcome variable	Independent predictor variables
<b>Number of days sickness absence</b> over the last year	Having a job that was perceived as boring, repetitive or monotonous Having a serious or long-term health condition
<b>Spells of sickness</b> (over one week) taken over the last year	General health (GHQ) Quality of relationships with managers
<b>Work performance</b> over the last 30 days	General health (GHQ) Workload Age Relationships with colleagues Lifting or carrying heavy weights
<b>Presenteeism</b> over the last 30 days	General health (GHQ) Age Relationships with colleagues

While the models in the survey did not account for a high proportion of the differences in sickness absence (between 3 and 4%), they accounted for a significant proportion of the variation in presenteeism. The regression models explained 30.6% of the variance in self-rated performance and 18% of the variance in presenteeism. The General Health Questionnaire (GHQ) is a measure of general health that focuses on psychological distress, and scores on this measure were the strongest predictors of the impact of health on work performance and presenteeism, accounting for 26.3% and 14.9% of the variance in these models respectively. With increasing age people reported less impact of health on work.

The objective characteristics of work appeared to have little impact on performance. More positive perceptions of workload and relationships with colleagues were associated with higher levels of self-rated work performance. More positive perceptions of relationships with colleagues were associated with lower levels of presenteeism (i.e. perception that health interferes with work).

### **Longitudinal analysis**

The longitudinal analysis was carried out using MLM, which allows for changes within individuals over time (level 1 variables) and differences between individuals (level 2 variables) to be examined simultaneously in a single statistical model. As in the cross sectional analysis, both subjective health (Yellow Flags) and occupational factors (Blue Flags) were found to be associated with absenteeism and presenteeism.

The longitudinal analysis indicated that general health - either at baseline or changes at each time point - did not predict the number of days sickness absence taken. Changes in health at each time point (EQ5D health thermometer) were associated with longer spells of sickness absence rather than baseline general health (GHQ). Both baseline general health and changes in health over time predicted performance, while it was baseline levels of general health (GHQ) rather than within-person changes over time that predicted presenteeism.

Although unrelated to the general health (Yellow Flags) variables, the number of days sickness absence taken was predicted by a number of Blue Flags. People who didn't have any regular contracted hours (e.g. casual/shift workers), those who did not supervise other employees, whose jobs often entailed lifting, or were not able to work flexible hours reported a higher number of days absence. Improvements in perceived quality of workload issues were associated with a reduction in the number of days absence. The longitudinal analysis revealed that higher levels of work stress were associated with lower levels of sickness absence. The cross-sectional analysis indicated that for stress and other mental health complaints, people were more likely to attend work but report impaired performance rather than taking absence. This highlights the complexity of the relationship between health and work. For people who are experiencing stress, therefore, interventions that focus on presenteeism and supporting people in remaining at work are likely to be particularly relevant.

Longer spells of sickness absence were associated with changes in general health, and appeared to be influenced less by the Blue Flags issues. The only occupational variable associated with a greater number of longer spells of absence was not being responsible for supervising other employees.

In addition to general health, the performance and presenteeism variables were predicted by a number of occupational variables. People whose jobs involved a manual component (lifting and/or standing) reported higher levels of performance, and lower levels of presenteeism. This suggests that people in occupations that involve manual work are more likely to report absenteeism and less likely to report presenteeism than those whose jobs do not involve a manual component. In these cases, focusing on strategies that would enable people in manual jobs to stay at work by providing modifications and support could be useful (e.g. lighter or modified duties, reduced hours). Improvements in the perceived quality of workload issues were associated with improved performance. People with a high number of contracted hour and who worked more extra hours reported higher levels of presenteeism, perhaps due to the demands of their jobs.

While the cross-sectional analysis highlighted the role of relationships with managers and colleagues in predicting absenteeism and presenteeism, the longitudinal analysis indicated that over the 12-month period absence and performance were sensitive to changes in perceptions of workload. The cross-sectional analysis indicated that the perceptions of work variables were inter-related and the volume and level of control over workload is associated with the quality of inter-personal relationships. Using both methods of analysis, perceptions of work were associated with performance and absence independently of the health variables. These factors are potentially modifiable, and strategies that improve communication, enable better management of workload, and promote work-life balance could be of benefit.

In terms of the organisational context (Black Flags), the organisations took a proactive approach to managing sickness absence and health promotion and several policies and services were in place to support staff. Nonetheless, for NG NHS Trust and MTCBC combined, the cost of the impact of health on work in terms of staff absence alone amounted to £6.2 million during 2006/2007. This study indicated that perceptions of work are strongly associated with subjective health and well-being, and both health and perceptions of work can contribute to the impact of health on work – particularly in terms of performance. Worker- and workplace-centred interventions can be effective in reducing the impact of health on work, which could have considerable benefits within these organisations both in terms of the well-being of employees and for the functioning of the organisations.

## ***Study 2: Qualitative study***

As demonstrated in the WiW employee survey, health can have a considerable impact on sickness absence and performance, while health, well-being and performance are all associated with the psychosocial characteristics of the work environment. In addition to clinical and occupational factors, wider social and cultural issues can be important in

determining attitudes towards absenteeism and presenteeism. For the individual with a health problem, these different factors come together and interact. Investigating lay perceptions can indicate how beliefs and attitudes about health and work are constructed within their social context. Furthermore, by exploring individual experiences, we can begin to see how problems in one part of the Flags Model can act as barriers to effecting change in another.

The study set out to explore personal experiences of health and work in-depth within their social context using both one-to-one interviews and focus groups from different perspectives; employees in general, people with musculoskeletal complaints, and managers. Overall, 101 participants (66% female, 34% male) with an age range of 18-60 took part in this study. 63 participants participated in a series of 14 focus groups. 18 participants with musculoskeletal pain and 20 managers within the organisations participated in one-to-one interviews.

The major challenges people discussed in terms of working with health problems and return to work related to the functional impact of their illness on their work or ability to get to work, and the implications of this for their colleagues. This study highlighted that the impact of health on work reaches beyond the individual, affecting their colleagues and managers as well as having implications for the organisation as a whole. Relationships with managers and colleagues were important in allowing people to remain at or return to work. Flexibility, adjustments to work, and graded re-entry to work were viewed as being particularly beneficial in working with health problems. However, the support of managers was viewed as essential in taking advantage of these organisational policies.

The moral aspects of work absence - presenteeism and negative attitudes towards 'non-legitimate' sickness absence - were frequently and intensively discussed themes. In line with previous research, discussion around the legitimacy of absence was common and a culture of presenteeism appeared to be the norm<sup>27</sup>. These issues may be particularly salient for common musculoskeletal and mental health problems; these are often 'unseen' illnesses and the cause is not always identifiable, so establishing legitimacy may be problematic. This was reflected in the ambiguity surrounding stress in particular. While stress was perceived to be a common problem that affected people's performance, mood and relationships with others, there was considerable stigma attached to this complaint. The stigma attached to mental health complaints could prevent people from disclosing their problem or accessing available services, such as on-site counselling. Managers also expressed concerns that 'stress' could be used as a reason for taking long-term leave with little medical evidence to substantiate the illness or need for such long absences. Communication with employers, colleagues, and health professionals are common

challenges associated with employment and mental health complaints, and removing these obstacles to remaining in employment is likely to be key in enabling people to work <sup>28</sup>.

The interactions between different layers of the Flags system were of particular interest in this study. The role of managers in these interactions was key; they were responsible for implementing organisational policies such as flexible working and graded re-entry to work at a local level, signposting individuals towards relevant sources of support (e.g. onsite counselling, OH services), and via the quality of their relationships and communication with employees. Providing line managers with the skills, training and support they need to get the best out of their staff and support them when they are affected by health problems could have considerable benefits both in economic terms and for the well-being of employees.

Other difficulties with implementation of organisational policies on a local level included practical constraints relating to the nature of the job, difficulties in adhering to sickness absence procedures when ill (e.g. a new policy of phoning in daily could be difficult when suffering from flu), and negative attitudes towards some policies, particularly in cases where people were genuinely too unwell to attend work and these were viewed as placing undue pressure to return to work. Many of these challenges were potentially modifiable via occupationally focussed interventions, such as those aimed at improving training, communication, and organisational policies and procedures.

## **General discussion**

The impact of health on work is a complex issue and a biopsychosocial approach, such as the Flags Model, is useful in conceptualising this. The Flags Model is useful in identifying clinical and occupational risk factors for poor recovery and identifying the potential for employing evidence-based interventions to address these factors. This research demonstrated that health can have a considerable impact in terms of presenteeism as well as absenteeism. Focusing on absence alone underestimates the impact of health on work and orientates organisational approaches to reducing the impact of work towards managing absence rather than optimising performance. Furthermore, the association between the psychosocial work environment - relationships with managers in particular - and subjective health and well-being highlighted the importance of moving beyond the traditional 'health and safety' approach to risk management in the workplace.

The employee survey revealed that perceptions of work independently contributed to explaining differences in absenteeism and presenteeism when the variance due to general health and well-being had been accounted for both in the cross-sectional and longitudinal analysis. This highlighted the need to address these issues in improving well-being in work and in reducing the impact of health on work. The qualitative study mirrored these



findings, with health having wide-reaching effects on work and the role of managers was key in providing support and enabling people to access policies and services provided by the organisations. Many of the challenges people faced in working with health problems in this study were potentially modifiable psychosocial issues, indicating significant potential for the development of workplace- and worker-focussed interventions.

In terms of regional context, there can be medical, psychological, social and economic barriers to work, particularly when high levels of socio-economic deprivation are present <sup>29</sup>. There were several challenges identified in the Merthyr Tydfil area in relation to health and work during Stage 1 of WiW, but there are also many opportunities in terms of the ongoing regeneration of the area and the robust policy context. While strategies for improving well-being in work are much needed in this community, many of the challenges identified in this research were consistent with studies carried out in different locations and organisations. 'Good jobs' were valued and a culture of presenteeism was the norm. This suggests that interventions developed in this community would have applicability elsewhere and vice versa.

Table 2 provides a summary of the key challenges along with potential solutions that could be implemented in the workplace. Interventions working on similar principles could also be applied in other contexts, for example within the NHS (including primary care), JobCentre Plus, vocational rehabilitation services, or on a wider societal level.

In conclusion, health can have a significant and wide-reaching effect on work from the perspectives of employees and employers alike. The impact of health on work is a multi-factorial issue, which is likely to require multi-faceted solutions. In the long-term, a broad whole-systems approach is required when considering the impact of health on work and how this could be reduced. However, many of the variables that are associated with absenteeism and presenteeism are potentially modifiable. Therefore, in the short to medium-term, there is significant potential to introduce successful interventions at a number of levels focusing on the individual, organisations, health professionals and/or the general public.

**Table 2. Challenges identified and potential solutions**

Recommendation	Flag	Potential interventions
Addressing the health problem itself via timely access to effective health services.	Yellow	<ul style="list-style-type: none"> <li>Ensuring access to on-site health services is available</li> <li>Ensuring employees can easily access appropriate aids, e.g. back supports or foot stools</li> <li>Implementing health &amp; safety policies nationally developed</li> <li>Facilitating staff access to health services during working hours, i.e. providing time/work cover etc.</li> <li>Sighting health services in appropriate locations, e.g. avoid walking through HR to visit counselling services</li> <li>Develop health promotion initiatives that are accessible to all employees</li> </ul>
Ensuring the psychosocial as well as physical work environment is conducive to well-being & ability to work with health problems.	Blue	<ul style="list-style-type: none"> <li>Arrange regular meetings between managers and employees to discuss practical problems &amp; potential solutions</li> <li>Creating staff rooms/cafes where staff can meet &amp; socialise encourages social support</li> <li>Where possible, upgrade facilities to provide a pleasant working environment</li> <li>Where possible, enable flexible working to enable employees a degree of control over their own time</li> <li>Actively look for solutions to working issues identified by staff, for example modifying work or re-distributing responsibilities</li> </ul>
Having appropriate policies, procedures & services in place on an organisational level & ensuring these work in practice.	Black	<ul style="list-style-type: none"> <li>Consult employees about changes in policies &amp; in how to communicate these policies to the wider staff</li> <li>Provide timely information on changes in policy</li> <li>Ensure employees have access to policy documents</li> <li>Train managers in implementing policies appropriately</li> <li>If necessary, ensure that policies are appropriate for all employees or can be adapted to different job types or health problems</li> </ul>

Cont.

Recommendation	Flag	Potential interventions
Providing adequate support & training to line managers.	Black	<ul style="list-style-type: none"> <li>Develop structured training in communication skills for managers</li> <li>Ensure managers are aware of policies &amp; any updates &amp; that they communicate these to staff</li> <li>Training in giving feedback &amp; in conducting appraisals</li> <li>Ensure appraisals are carried out &amp; outcomes are followed-up</li> </ul>
Tackling the cultural barriers to improving well-being in work, such as the stigma attached to mental health complaints.	Black - system (may be Blue if done in house)	<p>In-House</p> <ul style="list-style-type: none"> <li>Providing all employees with information about health or access to this information, either by using onsite occupational health services or via online information systems</li> </ul> <p>System</p> <ul style="list-style-type: none"> <li>Encouraging the organisation/employees to participate in community action/charities associated with specific health conditions to raise general awareness</li> </ul>
Ensuring that government policies reflect the impact that pain & other health problems have on work, giving these issues the priority they require in light of their economic impact and effect on quality of life.	Black - system	<ul style="list-style-type: none"> <li>Be aware of Government policies/initiatives surrounding health &amp; work and actively participate in any consultation process</li> </ul>
Considering socio-economic & regional context in the development of policies & interventions.	Black - system (Blue if in-house)	<p>In-House</p> <ul style="list-style-type: none"> <li>Consider the hours employees are expected to work in relation to public transport links (particularly in regions where there is low car ownership)</li> <li>Make use of grants and incentives to promote better health &amp; lifestyle choices of staff or to develop a lift-share scheme for example</li> </ul> <p>System</p> <ul style="list-style-type: none"> <li>Be aware of local Government policies &amp; actively participate in any consultation process to highlight the needs of employees</li> </ul>

# 1. INTRODUCTION

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## 1.1. BACKGROUND

The WiW Partnership was formed to implement the recommendations of the Wales Health Work Report (WHWR), completed by the Wales Health Work Partnership in November 2004. The WHWR was commissioned by the Welsh Assembly Government (WAG) and the UK Department of Work and Pensions (DWP) to investigate new ways of addressing the adverse impact of health inequalities and social exclusion on work. The WHWR recommended that the impact of health on work should be made a major research priority. While research needed to be informed by an evidence-based framework, it also needed to be of practical utility and of demonstrable benefit to the people of Wales at a community level.

The WHWR advocated that potential schemes should seek to encompass the goals and aspirations evident in current policy developments, with mechanisms in place to facilitate both intra-governmental and cross-departmental collaborations, as well as exploring further joint UK government-WAG initiatives. Furthermore, funding should be sufficiently flexible to enable the establishment of new types of partnership designed to investigate innovative solutions to the influence of health on work. It was emphasised that particular attention should be paid to *appropriate* and *timely* interventions to maximise the effectiveness and efficacy of interventions, but also to minimise preventable dysfunction and ineffective or misguided clinical and occupational interventions. A multi-faceted strategy was required with attention directed on specific schemes designed to maximise retention, on occupational rehabilitation and on sub-optimal performance (presenteeism) as a precursor of sickness absence, job loss and entry into benefits.

The primary aim of forming the WiW partnership was to attempt to translate the recommendations of the WHWR into a set of practical proposals aimed to enhance employment opportunity, performance and satisfaction. The purpose of this was to contribute to work in the Heads of the Valleys areas that sought to address the problems of disadvantage and social exclusion. The overall strategy for WiW was to establish a 'community laboratory' in Merthyr Tydfil to investigate and the relationship between health and work, aiming to address the impact of health on work. The initiative was designed to permit the integration of a set of related but self-contained research projects, running both in parallel and sequentially, with clearly defined outcomes and milestones within an appropriate project management framework.

The WiW partnership was formed to bring together key stakeholders, promoting joined-up thinking and cross-agency partnerships, in investigating ways to improve health and well-

being in work. Members of the WiW partnership include the Wales Centre for Health, three leading UK academic institutions (Swansea, Cardiff and Keele Universities), local employers in Merthyr Tydfil - Merthyr Tydfil County Borough Council (MTCBC), North Glamorgan NHS Trust (NG NHS Trust), Jobcentre Plus the National Public Health Service (NPHS) in Wales and Merthyr Tydfil Local Health Board. While the WiW research focuses on Merthyr Tydfil, it is envisaged that lessons learned will have wider applications across the South Wales Valleys and the rest of the UK.

The WiW initiative aimed to implement the recommendations of the Wales Health Work Partnership report through a programme of research, completed in three distinct stages:

- Stage 1: Profiling the community of Merthyr Tydfil
- Stage 2: Investigating the impact of health on work using a multi-method interdisciplinary approach
- Stage 3: Developing work retention and rehabilitation interventions based on evidence gathered during Stages 1 and 2.

Stage 1 of the WiW research was completed in March 2006, setting the socio-economic context and providing the baseline for the project <sup>2</sup>. This report relates to Stage 2 of the WiW research, which commenced in August 2006. This report begins by providing the background to the WiW initiative, presenting the key findings of the WiW Stage 1 report to set the regional and policy context for the project. Literature reviews were carried out in two main areas: firstly, the relationship between health and work and interventions aiming to reduce the impact of health on work, and secondly on the economic burden of pain. The Stage 1 research and literature reviews provided the evidence-base for Stage 2 of WiW, directing the research questions and methodology. A mixed-methods approach was used to investigate the relationship between health, well-being and work in major public sector employers in Merthyr Tydfil. The potential for workplace- and worker-centred interventions to improve well-being in work in this context was explored. In this report, the WiW Stage 2 research is presented and findings are discussed in terms of relevance to theory, policy and practice.

## **2. WELL-BEING AND WORK IN MERTHYR TYDFIL**

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During Stage 1 of the WiW initiative, a socio-economic profile of Merthyr Tydfil was produced, identifying a number of challenges and opportunities within this community. The variation in prevalence and impact of health problems according to social and economic factors is well documented. In most developed countries, objective measures of health have improved over time, but social inequalities in mortality, life expectancy and long-term illness have widened<sup>30</sup>. Material poverty is the strongest predictor of life expectancy and mortality, but relative deprivation within a society also plays an important role<sup>31</sup>. Inequalities in health between regions within the UK are striking<sup>32 33</sup>. The negative effects of common mental health problems (CMHPs) such as depression and anxiety may be more marked for people living in deprived areas<sup>34</sup>. The prevalence of health problems can also vary according to age, gender and employment status<sup>23 35-39</sup>. Unemployment can pose a serious risk to mental health and has a strong independent association with suicide rates (Odds Ratio 2.6) when other socio-economic variables are controlled for statistically<sup>35</sup>. Therefore, setting the socio-economic context for the WiW initiative was an essential component of the WiW research. In Stage 1, information on health and work in the Merthyr Tydfil was systematically gathered from a wide variety of statistical databases and policy documents to provide a socio-economic profile of the area and the local and national policy context was set out. A brief summary of the key findings of WiW Stage 1 is provided here to set the context for the Stage 2 research.

### **2.1. DEMOGRAPHIC PROFILE OF MERTHYR TYDFIL**

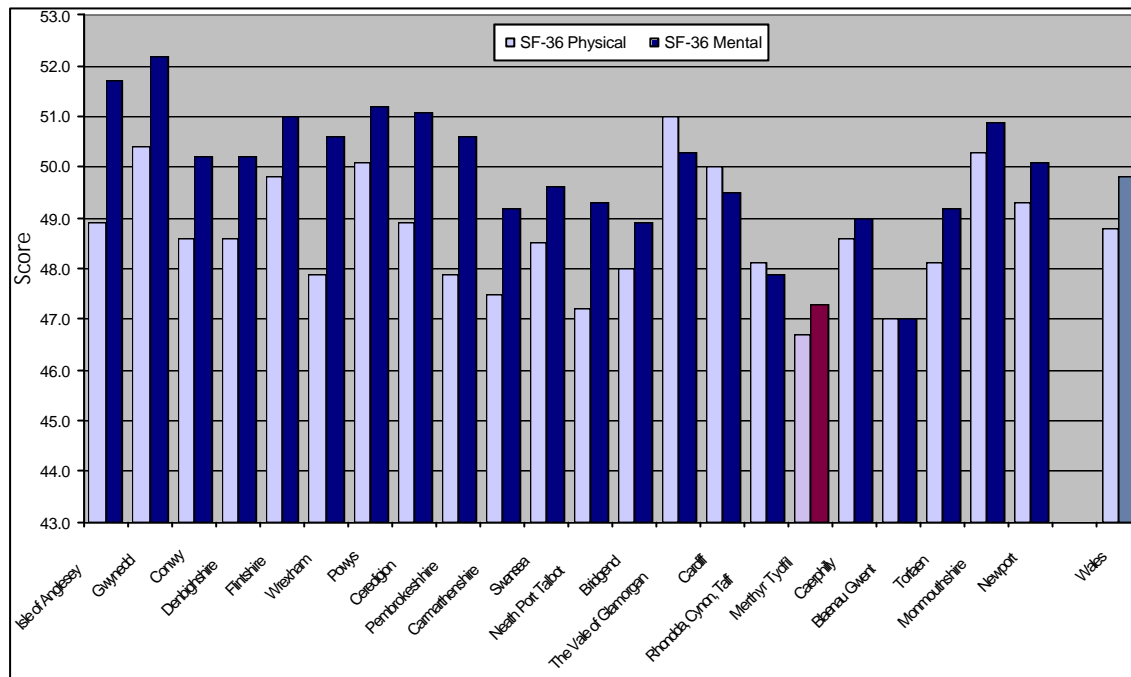
The WiW Stage 1 Report<sup>2</sup> describes Merthyr and its environs as 'an archipelago of islands', as the region is made up of a number of smaller communities, with variation in their demographic characteristics. In 2006, the population of Merthyr Tydfil stood at 55,400 (a decline of nearly 8% since 1991), against an overall population for Wales of 2.94 million. The percentage of people aged 65 years and over was relatively high in Park, Town and Vaynor Wards compared to the rest of Merthyr and Wales. In Gurnos, over 30% of the population is aged 19 years and under compared with 22% in Park and 25% across Wales. The percentage of people who are single (never married) ranges from 38% in Park to 49% in Gurnos, which is higher than the 28% of single people in Wales overall. There has been a consistent upward trend in the number of births to women under 25 in Merthyr over recent years, with 45% of births in 2003 being to younger women compared to 31% in Wales.

### **2.2. COMMUNITY HEALTH PROFILES IN MERTHYR TYDFIL**

Half of the communities in Merthyr are in the 10% of most deprived areas in relation to health in Wales. This is also reflected in the SF-36 scores collected during the 2003/04

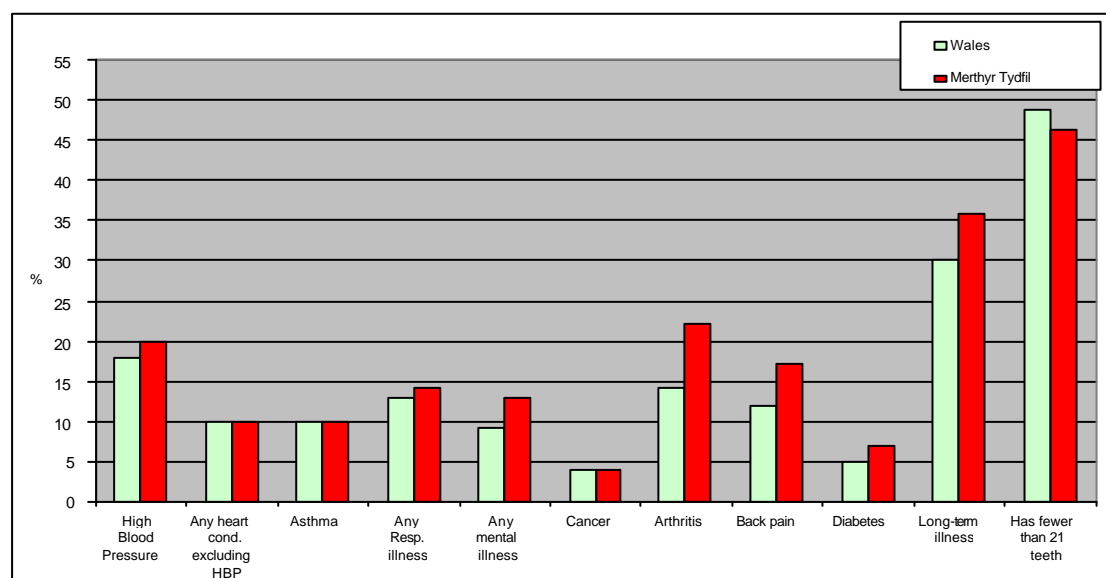
Welsh Health Survey<sup>36</sup>, where Merthyr had the lowest Physical Health score for any area in Wales and the second lowest Mental Health score (Figure 1).

**Figure 1. Welsh Health Survey SF-36 Scores across LA areas**



The Welsh Health Survey<sup>36</sup> indicated that nearly 30% more people in Merthyr were suffering with long-term limiting illness (LTI) compared to Wales overall. As displayed in Figure 2, disease prevalence in Merthyr was found to be significantly higher than in Wales for hypertension and respiratory conditions, but especially for mental health, arthritis, back pain and diabetes.

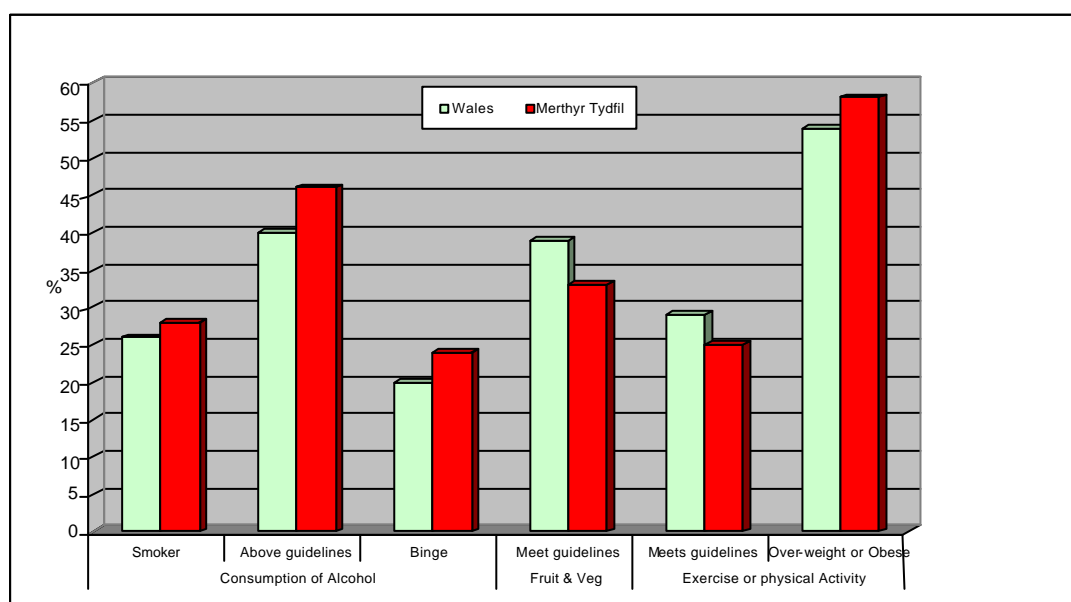
**Figure 2. Welsh Health Survey data (2003/04): percentage of adults reporting key illnesses**



In excess of 1.2 million prescriptions were issued in Merthyr during 2004-05 at a cost of £12 million. While prescriptions were issued at the highest rate per head of any LHB in Wales, the cost per item prescribed was one of the lowest in Wales - 20% lower than in the highest cost LHB. People in Merthyr were more likely to visit their GP or practice nurse, have had a hospital out-patient appointment, attended A+E or have been admitted as an in-patient relative to the Welsh average. However, they were less likely to have been a hospital day patient or to have made contact with a pharmacist, dentist, optician or chiropodist. A greater percentage of out-patient appointments were not kept at North Glamorgan NHS Trust than in Wales, with particular problem areas being Palliative Medicine, Paediatrics, ENT, Dermatology, Obstetrics, Gynaecology and Psychotherapy. There were more people waiting for an initial out-patient appointment than the Welsh average, but fewer people than average waiting for in-patient admission and day-case treatment.

Merthyr Tydfil has one of the highest percentages of low birth-weight babies in Wales, while along with Blaenau Gwent it has the highest rate of teenage pregnancies in Wales. Around a third of the 50,000 children living in income poverty in Wales live in the Valley areas<sup>33</sup>. Merthyr Tydfil has higher rates than the Welsh average for lifestyle risk factors for poor health, with higher rates of smoking and alcohol consumption above the recommended guidelines, and lower rates of exercise patterns and consumption of fresh fruit and vegetables (Figure 3). Unless these issues are addressed, they will store up further problems for this community in the future, and it is imperative that deprivation is tackled so that health in this community can improve.

**Figure 3. Lifestyle behaviour**

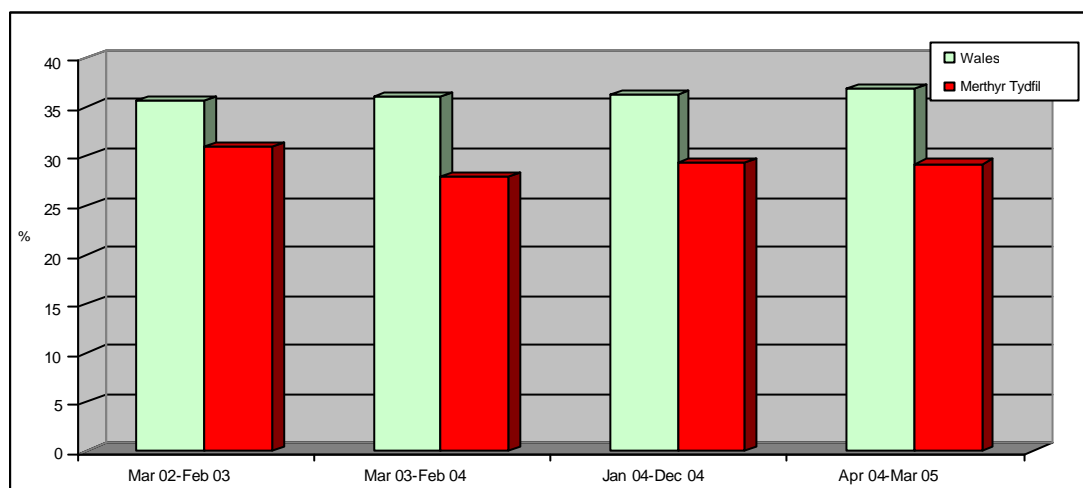




## 2.3. EMPLOYMENT AND ECONOMIC INACTIVITY

The percentage of the population in employment in Merthyr (28-31%) has consistently been lower than in Wales as a whole (36-37%) and in Great Britain (40-42%), as shown in Figure 4.

**Figure 4. Percent of population in employment (March 2001-05)**

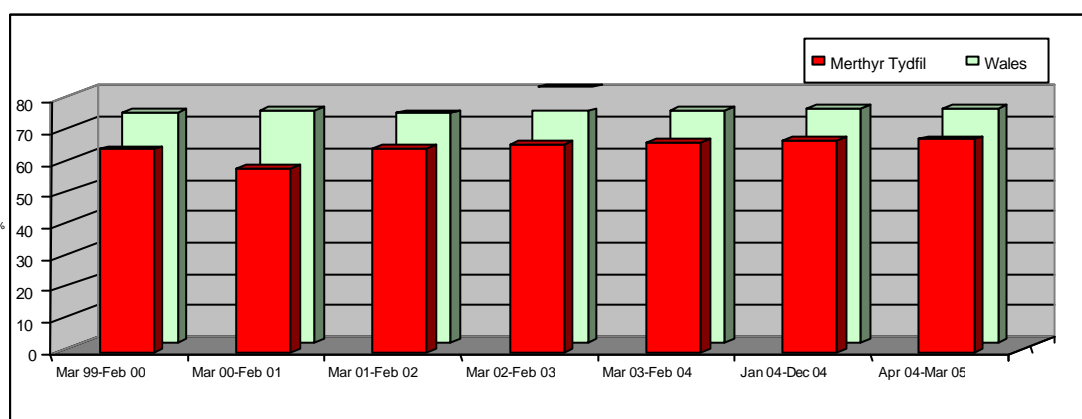


There are also differences in the structure of employment between Wales and Merthyr; 19% of employees are in categories 1 and 2 (managers, senior officials, and professionals) in Merthyr compared to over 24% in Wales and 28% in GB. In contrast, 26% of people in Merthyr are employed in categories 8 (process plants and machine operatives) and 9 (elementary occupations) compared with 22% in Wales and 19% in GB. Gross weekly earnings are lower in Merthyr than in Wales overall. However, there are signs that the differential in earnings overall may be closing, as annual gross earnings in Merthyr have increased from 85% of the Welsh figure in 2002 to nearly 89% in 2005.

There is a close correspondence between numbers of people on benefits and income levels within communities. The proportion of people receiving state benefits exceeds 25% in two-thirds of the wards in Merthyr Tydfil – the highest level of state dependence<sup>33</sup>. The percentage of those who have never worked is 7.9% in Merthyr compared to 5.6% in Wales, but there are wide variations across the Borough with 13.5% of people in Gurnos never having worked. The unemployment rate in Merthyr is higher than the Welsh average, though not the highest in Wales; the proportion of people who are unemployed or economically inactive and who want work is running in excess of 12% of the working age population. The percentage of unemployed people who have been out of work for more than 15 years in Merthyr is 34%, with 54% out of work for more than 10 years compared with 30% and 48% respectively for Wales.

There has been pressure to increase economic activity rates across Wales; between 1999 and 2005 there was a decline in the number and percentage of people claiming state benefits across the region<sup>37</sup> [IB, JSA, and income related (IR) benefits] in Merthyr Tydfil. However, the economic inactivity rate in Merthyr (32%) continued to lag behind the Welsh average (25%) and those achieved across GB as a whole (22%). Economic activity rates for Merthyr Tydfil and Wales from 1999 to 2005 are shown in Figure 5. The number of claimants in receipt of benefit (i.e. current valid claims based on medical evidence) was consistently higher in Merthyr Tydfil (74% to 79%) than for Wales (69% to 74%) and the average duration of claims was longer in Merthyr Tydfil during the 2000 to 2005 period, which was consistent with the data relating to LLTIs in this region. It is necessary to carefully consider the approaches and schemes that can result in improvements in the economic activity rate bearing in mind that employment deprivation currently witnessed needs to be addressed.

**Figure 5. Economic activity rates in Merthyr Tydfil and Wales**



## 2.4. POVERTY, SOCIAL EXCLUSION AND DEPRIVATION

The Joseph Rowntree Foundation Report<sup>33</sup> ranked Merthyr as the most deprived community in Wales in terms of both child and working-age poverty. The report stated that around a third of the 50,000 children living in income poverty in Wales live in the six Valley local authority areas of Neath Port Talbot, Merthyr Tydfil, Blaenau Gwent, Caerphilly, RCT and Torfaen. In these areas, the proportion of children who are living in income poverty is in excess of 30 per cent. As highlighted above, deprivation in Merthyr Tydfil is evident in relation to health, employment and income. In Gurnos, for example, only 37% of the population are in employment and over 13% of the population have never worked. A higher proportion of the population in Merthyr are claiming IB and the duration of time which people have been receiving benefits is considerably longer than in Wales overall. In two-thirds of the wards in Merthyr more than 25% of the population are in receipt of state benefits.

The consequences of social exclusion and deprivation are often manifest in crime, drug and alcohol problems, and despite a fall in recent years, Merthyr still has one of the highest rates of reporting drug problems in Wales. Merthyr has the highest incidence of anti-social behaviour compared to the other areas within the South Wales Police Force region. The overall crime rate was 32.5 offences per 1000 of the population, compared with 24.7/1000 in Wales in 2003-04. There are also clear linkages between levels of deprivation and educational attainment: 44% of the population in Merthyr have no qualifications compared to 33% of the Welsh population, with the percentage rising to 57% in Gurnos. Merthyr has 28% of its communities in the 10% most deprived communities in Wales in relation to education and the Rowntree Report <sup>33</sup> placed Merthyr as the most deprived authority in Wales in relation to performance at GCSE level; the second most deprived area in terms of attainment at Key Stage II; and, the second most deprived in the proportion of 18 year-olds who go on to higher education.

There is growing pressure across Wales and in Merthyr Tydfil both to improve health and reduce economic inactivity, but this challenge needs to be considered in the context of the community, particularly in relation to the health of the population in question and the labour market in the region. In terms of reducing poverty and dependence on state benefits in this area, a holistic approach is essential. Consideration needs to be given to the multiple challenges people are likely to face in regions where there are high levels of deprivation; people are at higher risk of having health problems, and lack of education, skills and employment opportunities can all act as barriers to work. Furthermore, the structural, psychological and social barriers to return to work need to be understood and addressed. The solution to the problems in this area is not to simply make access to benefits more difficult, or even to obtain an individual's commitment to attempt to return to work. The complex context within which claims for state benefits are made has to be considered and the underlying causes for economic inactivity and perceived poor health need to be addressed.

### 3. WELSH AND UK POLICY CONTEXT

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In the WiW Stage 1 report <sup>2</sup>, an overview of the policy context for health and incapacity for work was provided, including relevant current UK and WAG economic, health and social care, and health and work policies that will impact on Merthyr Tydfil. Of particular relevance to the WiW project were the *Heads of the Valleys* and *Health Challenge Wales* initiatives within Wales, as well as the *UK Health, Work and Well-being Strategy*.

#### 3.1. WAG POLICIES

In Wales, there has been an attempt to span traditional policy areas and adopt an integrated approach, with the Welsh Assembly Government (WAG) providing policies and programmes to promote equality of opportunity, social inclusion and sustainable development, as detailed in the *Well Being in Wales* <sup>38</sup> document. WAG economic policies also reflect the need for joined-up thinking, and should be viewed in the context of *Wales: A Better Country* <sup>39</sup>, which acknowledges that economic development has to be part of a wider agenda encompassing social justice, environmental improvements, better health, language and learning, and community regeneration. The WAG strategy for economic development has been described in the consultation document *Wales: A Vibrant Economy* <sup>40</sup>, focusing on encouraging sustainable growth through helping more people into work and to raise earnings by maximising the value created in the Welsh economy. However, in highlighting some of the successes in increasing employment levels, reducing unemployment and raising earnings, the document recognises that such gains have not been seen across all areas and there are geographical locations that need specific attention, including Merthyr Tydfil. Among proposed strategic economic development themes, there are two key areas that have particular relevance to reducing economic inactivity in Merthyr Tydfil:

- Supporting job creation and helping individuals to tackle barriers to labour market participation in the world of work
- Investing in regeneration of communities and stimulating economic growth across Wales.

The approaches employed in attempting to reduce economic inactivity in the context of Merthyr Tydfil need to take in to consideration the multiple barriers to work that people can face, including health problems, lack of education/skills and suitable employment opportunities.

The provision of health services and the extent of resources required are of central

importance in improving health. Improving the health of the population is a key part of reducing incapacity for work as a result of health conditions; it is likely that this relationship is bi-directional, where reducing economic inactivity could reduce levels of deprivation and thereby contribute to improvement in health. The *Wanless Report* <sup>41</sup> clearly emphasised the need for action on a number of fronts to remedy system deficiencies and secure developments in the Welsh health service to ensure improvements in health outcomes for the population. WAG has committed itself to redressing the inequalities in health that exist within Wales and in comparison to the rest of the UK. Ambitious proposals for the development of health services in Wales over a ten year period were documented in WAG's NHS Plan <sup>42</sup>. Another feature of health policies has been the focus on collaboration and co-operation across agencies through formal and informal alliances, highlighted by the comments of the Minister for Health and Social Services in *Improving health in Wales* <sup>42</sup>:

*"...improving the health of the nation poses challenges that no one organisation can meet. Strong partnerships between the NHS, local government, communities and the voluntary sector are at the heart of our new and inclusive approach to health."*

[Foreword by Minister for Health and Social Services]

During recent years, a variety of innovative multi-agency projects have been developed in Wales, involving collaboration between statutory, voluntary, and independent providers. However, there is a need for wider dissemination of good practice and removal of other barriers to partnership working between health and social care agencies if appropriate patient/client-centred care is to be delivered. The WAG *Designed for Life* <sup>43</sup> document sets out WAG policy for creating a world-class health and social care service in a healthy, dynamic country by 2015. It highlights the success of concentrating on delivering a healthy Wales through partnership, and goes on to detail the NHS Wales redesign challenge, philosophy and principles. It states that the service will be user oriented and based around a whole system approach, supported by targeted performance improvement and that commissioning will be driven by clear and rigorous standards of clinical governance. Health improvement will become a growing focus with its own policy and development, and will continue to foster efforts to target the causes of poor health; the NHS, local government and their partners will strengthen their approach to prevention at all levels. Individuals with health conditions will be supported in becoming 'expert patients', taking a high degree of control and responsibility over their treatment, with pre-planned care being organised around the recipient's needs and convenience. There will be more information, a wider range of treatment options and greater certainty in the system.

### 3.1.1. Health Challenge Wales and the Corporate Health

#### Standard

In 2005, WAG launched the Health Challenge Wales <sup>44</sup> (HCW) scheme to act as the focal point of efforts to improve health and well-being in Wales, recognising that wide range of factors impact on health and well-being and that co-ordinated action can help to create a healthier nation. HCW was set against the background of the report produced by the Chief Medical Officer for Wales - *Health Status Wales 2004-05* <sup>45</sup>, which highlighted the status of the health of the nation and the work that was required to improve it. It has been a noticeable feature of a number of initiatives carrying the HCW logo. As part of HCW, WAG introduced the Corporate Health Standard <sup>46</sup> (CHS) award scheme as a national mark of quality for health and well-being in the workplace. This was originally aimed at large organisations and was extended to SMEs in 2006. The CHS is designed to promote good practice and improvement and can be used as a tool to support the development of policies that promote the health and well-being of employees. Using an organisational development approach, it promotes good practice and supports organisations in taking active steps to protect and promote the health and well being of their staff, targeting key preventable ill-health problems. The Standard is awarded at Bronze, Silver, Gold and Platinum levels based on the policies and activities in place in the organisations aimed at improving employee health and well-being.

### 3.1.2. The Heads of the Valleys Programme

The Heads of the Valleys Partnership Programme was launched by the Minister for Economic Development in November 2004; it is one of the most important initiatives designed to tackle the issues faced by the Heads of the Valleys communities, including Merthyr Tydfil. 'Turning Heads - A Strategy for the Heads of the Valleys 2020' <sup>47</sup> highlights the main aims of the strategy, based around 5 priority themes:

- An attractive and well-used natural, historic and built environment
- A vibrant economic landscape offering new opportunities
- A well educated, skilled and healthier population
- An appealing and coherent tourism and leisure experience
- Public confidence in a shared bright future

The document highlights a number of challenges and opportunities in the Heads of the Valleys area, and outlines a number of options for achieving a stronger and better balanced area. The preferred plan presented in the *Turning Heads* <sup>47</sup> document (Option A) focuses on:

*“...the creation of 'balanced communities' within the Heads of the Valleys to provide a mix of housing, retail, tourism and leisure facilities as well as high quality public services and opportunities for people to work within the area and outside it”* [p. 7]

The strategy clearly demonstrates a commitment to partnership working between WAG, local authorities, UK government, and private, public and voluntary sectors. Amongst the opportunities identified were; improvements in transport links within the area, ongoing major investment in the public sector, improvements in the labour market in the south Wales region, housing renewal, the local countryside and environment, the presence of strong communities, and the local and national policy context. However, challenges in the Heads of the Valleys include economic inactivity, the quality of jobs, the skills and education deficit, health, the image of the area, a lack of local leisure and retail facilities, and problems relating to transport and communication links between communities and beyond. The WiW Stage 1 report <sup>2</sup> highlighted several of these challenges in the Merthyr Tydfil area. The need for action and regeneration across the Heads of the Valleys area is clear; with intervention there is potential for the area to be revitalized, whereas inaction would be highly likely to result in further decline of the area <sup>47</sup>.

One of the key strategic goals of the Heads of the Valleys plan is to create a ‘*vibrant economic landscape offering new opportunities*’ <sup>47</sup> (p. 20). The strategic programmes in place to achieve this include working with JobCentre Plus and other service providers to support and encourage people who are economically inactive to return to work and to provide employers with support in meeting their skills needs. The strategy also outlines the role of improved communications and transport links in supporting local business. Furthermore, active programmes will be put in place to encourage and incubate new business opportunities, support entrepreneurship, and allow knowledge transfer and sharing of best practice. The public sector is recognized as having a key role in this strategy. The NHS is identified as an employer where the wider use of social clauses in investment programmes and support for human resource development and training will be encouraged. The aim of this is to allow local people to take advantage of business growth and ensure that education and training provision is in line with labour market needs.

### **3.2. UK WORK AND HEALTH POLICIES AND STRATEGIES**

The UK ‘*Health, Work and Well-being Strategy*’<sup>4</sup> produced jointly by the UK Departments of Health (DH) and Work and Pensions (DWP), along with the Health and Safety Executive (HSE) demonstrates a commitment to increase the effectiveness, efficiency and financial management of health and social services. This highlighted the need for organisations to be more responsive to the needs of increasingly well-informed patients and clients, and ensure better access for those most in need, with a focus on ‘whole-systems’ thinking. It is

envisaged that this will result in the provision of integrated health and economic policy initiatives, having long-term prospects of improving the 'health' of the Welsh economy. Prior to this, in 2000 the HSE published '*Securing health together: A long-term occupational strategy for England, Scotland and Wales*'<sup>5</sup>, which highlighted three principal reasons for a long-term occupational strategy:

- To stop people from being made ill by work
- To help people who are ill return to work
- To improve work opportunities for people currently not in employment due to ill health or disability.

It emphasised the need for concerted, concentrated, multi-factorial, multi-dimensional and multi-agency approaches to target collective efforts on the areas that need it most in achieving its targets. Once again, the role of partnership working was highlighted, involving Government, Local Authorities, individuals, large and small employers, trade unions and health professionals.

Major UK Government initiatives such as *Welfare to Work* agenda and the *Pathways to Work* programme developed by DWP, and were central to the aim of reducing the rates of workers moving on to, and remaining on, incapacity benefit. The success of the *Pathways to Work* pilot schemes were instrumental in driving the welfare reform Green Paper<sup>3</sup>, *A new deal for welfare: empowering people to work*, launched in January 2006. The basic tenet of the Green Paper is to continue to break down the barriers that prevent people from fulfilling their potential and, through worklessness and economic inactivity, lead to poverty and disadvantage. The Green Paper provides three specific targets:

- Reduce by 1 million the number on IB
- Help 300,000 lone parents into work
- Increase the number of older workers by 1 million

Reducing economic inactivity is a high priority in UK government policy, and the need for joined-up thinking and multi-agency partnerships has been recognised. This robust policy context provides an opportunity for the WiW initiative by prioritising improvement of health, providing safer working conditions and reducing economic inactivity, which are much needed in Merthyr Tydfil.

### **3.3. WIW: LINKS TO WAG AND UK POLICY AND STRATEGY**

UK and WAG policy and strategies encompass aims and initiatives that provide significant opportunities for further regeneration in Merthyr Tydfil and across the Heads of the Valleys.



The role of joined-up thinking and multi-agency partnerships in reducing economic inactivity, enabling people to work, and improving health and prosperity is evident. There is an explicit commitment to reduce the number of people who leave the workplace due to illness, increase the number leaving benefits, and better address the needs of all those on benefits with additional payments to the most severely disabled people. More recent policy initiatives display similar noteworthy aims and objectives, with a clear acknowledgement that there must be partnership working if the proposals are to be successful, with the recognition of the need for a whole-systems approach evident and a culture of collaboration across all stakeholders.

However, there are critical gaps in the process of achieving a whole-systems approach. For example, the significance of the role of primary care and GPs in particular in addressing issues relating to sickness absences and rehabilitation is not prominent from a policy perspective. In relation to the recent contract for GPs <sup>48</sup>, in terms of patient management and indeed remuneration there is no explicit reference or incentive scheme in place to reward those who take active steps in supporting individuals to remain in or return to work. Health care policies which focus on waiting lists do little to deal with the determinants of health problems in the first place, whereas policies designed to retain people in employment and return people to employment could result in reduced pressure on limited health care resources. Furthermore, while there is a clear drive to reduce economic activity, the nature and quality of work can vary widely. Current policy focuses on reducing the 'risk' of work to health and returning people to work, but little attention is paid to work retention or the effects of the work environment on health and well-being (and vice versa). Policies also need to be sensitive to regional context, particularly in regions where there are high levels of socio-economic deprivation where people may face multiple disadvantages that act as barriers to work <sup>29</sup>.

The WiW programme of research investigates the links between health and work in relation to socio-economic context, and the ultimate aim of the research is to develop interventions to improve well-being in work in the Merthyr Tydfil area. The WiW initiative seeks to encompass the aims and priorities outlined in a number of key WAG and UK government policies and strategic plans. The objectives of WiW are particularly relevant to the Heads of the Valleys Strategy in terms of reducing economic inactivity. Furthermore, the WiW initiative links with the HCW and CHS initiatives introduced by WAG in beginning to address a gap in current policy and strategic plans to make work a better place to be in terms of health and well-being. The WiW project adds to current work by moving beyond 'risk management' and health promotion approaches (primarily based on a biomedical model); WiW aims to investigate the relationship between psychosocial factors, work, and well-being for people in this area. Stage 2 of WiW focuses on public sector employers; these are major employers in the Merthyr Tydfil area and have been identified in the '*Turning Heads*'

document as having a key role to play in revitalizing the economy in the area. It is envisaged that lessons learned in the WiW project will be applicable across the Heads of the Valleys area. Through working with major public sector employers, knowledge of what constitutes 'best practice' can be improved and shared with private and voluntary sector employers.

## **4. THE BURDEN OF PAIN**

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The original focus of the WHWR was on musculoskeletal disorders, which were identified as a major problem for health and work in Wales that needed to be better understood and managed. As the WiW initiative has evolved, the project has been extended to look at health and well-being in a more general sense, although musculoskeletal complaints remain the focus of the project. In many senses, the lessons learned from the research on risk factors and interventions for chronic pain are likely to apply to other common health problems, including mental health complaints. As part of the Stage 2 research, a literature review was carried out on the burden of pain in economic terms and in terms of impact on quality of life <sup>49</sup>. A summary of the review is provided in this report, along with a discussion the current status of pain in UK policy and the potential for improving the way that pain is managed to reduce its burden both economically and in terms of quality of life.

### **4.1. THE PREVALENCE OF PAIN**

Pain represents a major clinical, social and economic problem. For many chronic pain patients, pain can become a more or less permanent feature of their lives. It has a profound impact on quality of life and optimal management of pain is important in reducing suffering. It has been recognised that chronic pain is one of the most widespread and difficult problems the medical community has to face <sup>50</sup>, with other symptoms, such as depression, anxiety, physical dysfunction and social isolation, often presenting simultaneously <sup>51</sup>.

Estimates of the prevalence of chronic pain range from 8% to 60% and over <sup>52-62</sup>. The range of rates reflects the different approaches, methodologies employed in determining the extent of chronic pain, and populations studied. In a survey in primary care organisations in the UK, 50% of respondents reported chronic pain (equivalent to 47% of the general population), with 27% reporting pain that was at least moderately limiting and caused high disability <sup>52</sup>. A follow-up study showed that the prevalence of chronic pain had increased from 47% at baseline to 54% at the 4-year follow-up, and that 79% of those with chronic pain at baseline still had it at follow-up <sup>53</sup>. The two most commonly reported causes of pain were back pain and arthritis, accounting for a third of all reported causes. Due to sampling issues, these rates may exaggerate the extent to which people will utilise health care facilities as a result of pain or its impact on their normal everyday ability to function. Nevertheless, it is evident that chronic pain represents a major problem for the health service, economy and society where significant returns could be generated if unnecessary chronicity could be avoided.

## **4.2. THE ECONOMIC IMPACT OF PAIN**

The extent of the chronic pain problem poses a significant economic burden for patients, health services and societies. Significant differences in estimates can emerge when different approaches are employed. For example, Maniadakis and Gray <sup>6</sup> estimated that the indirect cost of back pain in the UK was £10.7 billion (US\$16.4 billion) in 1998 using the human capital approach. However, using the more conservative friction cost method to estimate the consequences of replacing workers who have to leave the labour market due to their condition, the cost was estimated at £5 billion (US\$7.7 billion). Regardless of the methods employed, the economic cost of back pain is extremely high, before even considering the costs of other chronic pain complaints. In this section of the report, estimates of the costs of pain to the health service, the economy, and benefits agencies are presented.

## **4.3. COSTS TO THE HEALTH SERVICE**

Estimates of the costs to the health service resulting from pain and its management are typically based on direct costs, such as those relating to drugs and consultations. In 1998 in Germany, the estimated cost of back pain amounted to 10 billion DM (US\$4.6 billion) each year <sup>54</sup>, while in the UK back pain was estimated to cost the NHS £1 billion per annum <sup>6</sup>. It has also been estimated that primary care management of patients with chronic pain accounts for 4.6 million appointments per year in the UK, equivalent to 793 whole time GPs, at a total cost of around £69 million (US\$105.6 million), with poor efficacy the trigger for almost as many consultations as poor tolerability <sup>7</sup>.

Unnecessary referrals, treatment, and diagnostic tests, as well as ineffective treatments, are of particular concern as these costs are avoidable. In the clinical management of mechanical low back pain, once 'Red Flags' for serious pathology have been ruled out, referral for imaging or orthopaedic surgery is not recommended <sup>64 65</sup>. However, as around 90% of patients presenting with back pain have non-specific back pain, where no pathology can be identified, diagnosis tends to rely on ruling out specific pathology. This is despite greater evidence that psychosocial factors such as distress, depressive mood, and somatisation are associated with an increased risk of chronic low back pain that physical signs of damage or degeneration detected issuing imaging techniques <sup>55</sup>.

When people with back pain present in general practice and do not recover from pain as expected, general practitioners are faced with a significant problem. Information on identifying 'Yellow Flags' - psychosocial risk factors <sup>56</sup>, is available in clinical guidelines for general practitioners. However, having identified these, they are then faced with the problem of what to do about them in light of limited availability of specialist multi-disciplinary pain services to whom they could refer patients. Provision of specialist pain

services varies widely across the UK, and there is often a shortage of consultant sessions, support staff and premises in clinics <sup>57</sup>. Recommendations for improving pain services were laid out in the Clinical Standards Advisory Group <sup>58</sup> (CSAG), including to:

- review the provision of local pain services in relation to local need
- commission a range of specialist pain services across a number of centres
- set and monitor waiting times for chronic pain clinics, making sure that no one has to wait more than three months for their first appointment
- develop guidelines for referring patients and encourage evaluation of complementary therapy to ensure that NHS funding is directed to effective treatments

Unfortunately, little has been done to implement these recommendations, and pain management services are simply not available to the majority of people who have chronic pain. In addition, there exists what Fishman, Gallagher, Carr and Sullivan <sup>59</sup> refer to as the “crisis of inadequately treated pain”, with many misconceptions and ignorance existing among professionals regarding pain and its treatment <sup>60</sup>; patients are often not being treated or receiving sub-optimal care <sup>56</sup>. One of the disturbing features is the discrepancy between professional and patient perspectives, as evidenced in a telephone survey of nearly 6,000 patients with chronic pain and 1,500 primary care physicians conducted in eight European countries <sup>61</sup>. The survey indicated that physicians generally believed that patients were well managed. However, up to 27% of people with pain did not seek medical help and for those who did, there were major flaws in their treatment and overall management. Another study found that 40% of chronic pain patients were not satisfied with the treatment offered <sup>62</sup> and a similar percentage of patients across Europe have indicated a lack of satisfaction with their treatment <sup>61</sup>.

The above figures highlight the burden on primary care and GPs in particular. Patients presenting in general practice with musculoskeletal pain want a clear diagnosis of the cause of their pain, information and instructions, pain relief, and a physical examination, and have an expectation that there will be more diagnostic tests, other therapy, or referrals to specialists, and that they will receive a sickness certificate <sup>63</sup>. Difficult decisions have to be made about whether to refer patients and to whom, and whether to issue a sickness certificate, for how long, and what type of certificate should be provided; an open certificate where a return to work date is not specified, a closed certificate with a specified end date, or a certificate stating ‘need not refrain from work’ with notes to the employer on adjustments/limitations. Managing patients in primary care is a significant challenge and avoiding conflict in the relationship with patients accounts for much of the problem of implementing evidence relating to the management of back pain in general practice <sup>64</sup>. They argued that their findings indicated a need for insightful educational

strategies that involve active GP participation. There is evidence that training medical students and doctors in communication skills can help them to better manage difficult consultations <sup>65 66</sup> and there may be considerable gains in promoting best practice in primary care as well as improving access to specialist pain management services.

If the costs of chronic pain to the health service are to be reduced in the long term, the recommendations set out in the CSAG report <sup>58</sup> need to be incorporated in to government and NHS policy and strategic plans and implemented effectively. Investment is required to provide appropriate multi-disciplinary pain services to tackle psychosocial issues, as well as providing effective drug and other medical and complimentary treatments as appropriate. However, there could also be considerable benefit in providing training and support for health professionals working in primary care, where there is great potential to improve the management of pain early on. This may be particularly important in terms of tackling psychosocial issues and managing sickness certification, ideally while pain is still in the acute phase prior to the transition to chronic pain and long-term incapacity for work.

#### **4.4. COSTS TO THE ECONOMY**

Generally, the direct costs of pain management are minor in comparison with the impact on the economy resulting from the consequences of pain. For example, Eriksen et al. <sup>62</sup>, estimated that 1 million working days were lost annually in Denmark as a result of chronic pain. Another Danish study demonstrated that productivity costs account for 85% of the total lower back pain costs per patient <sup>62</sup>. The effect of pain, and in particular pain exacerbations, was evident in a study in the USA carried out in 2003/2004; it was estimated that the impact of arthritis on lost productive work time amounted to US\$7.11 billion, but with 66% of this attributed to the 38% of workers with pain exacerbations <sup>67</sup>.

Musculoskeletal conditions are one of the major causes of pain and disability across the world and the most common medical cause of long-term sickness absence <sup>68</sup>. In the UK, for example, 3,000 people go on to the incapacity benefit scheme every week and a mere 300 ever return to work <sup>69</sup>. 206 million working days were lost in 1999-2000 in the UK due to arthritis, the second most common cause of days off work, while in Germany musculoskeletal conditions cost employers €24.5 million (US\$ 30.8 million) – the largest single contributor to lost productivity <sup>70</sup>.

As well as its impact on absenteeism, it is also known that pain has a major impact on worker productivity. A US study, found that common pain conditions resulted in lost productivity (also referred to as presenteeism) amounting to \$61 billion per year, of which 77% was explained by reduced performance and not work absence <sup>16</sup>. Similarly, van Leeuwen et al. <sup>17</sup> demonstrated that while the number of absent workdays was estimated to be 9.9 million annually in Australia, reduced effectiveness workdays were estimated at 36.5

million per year, which elevated the productivity costs from Aus\$1.4 billion (US\$ 1.1 billion), resulting from absenteeism, to Aus\$5.1 (US\$ 3.8 billion) when both absenteeism and presenteeism were included. Furthermore, as well as the impact on absenteeism and presenteeism, the odds of quitting one's job because of ill health have been shown to be seven times higher among people with chronic pain problems than those without <sup>62</sup>.

Research in this emerging area of study of presenteeism focuses on such chronic or episodic ailments as seasonal allergies, asthma, headaches, depression, back pain, arthritis, and gastrointestinal disorders. The fact is, when people don't feel well, they simply don't perform at their best. Pain affects physical and psychosocial functioning <sup>71</sup>, and it also impacts on cognitive functioning, where it interrupts attention, distracts, and is difficult to disengage from <sup>72</sup>. Pain can potentially have wide-reaching impact on performance at work, which could vary according to individual, social, and occupational factors. A number of companies are making a serious effort to determine the prevalence of illnesses that undermine job performance, calculate the related drop in productivity, and find cost-effective ways to combat that loss. Indeed, Hemp <sup>73</sup> has argued that presenteeism-related declines in productivity can be more than offset by relatively small investments in screening, treatment, and education.

Despite the problems associated with cost of illness studies <sup>74</sup>, it is apparent that the economic impact of pain is substantial and imposes a greater economic burden than most other diseases <sup>6</sup>. However, Smith <sup>75</sup> has contested that decision makers and policy makers have concentrated attention on a very minor component of the cost burden, namely costs associated with analgesic prescribing, because they are easy to measure and are therefore an obvious target for restrictions. There has been some success in the USA in terms of getting pain management in to government policy and implementing these policies, but again the primary focus is on pharmacological treatments and guidelines for prescribing analgesics <sup>76</sup>. The percentage of direct costs accounted for by prescriptions for back pain amounts to around 5%, which is around 1% of the total burden <sup>6 68</sup>. The acquisition costs of medication are but one very small and insignificant part of a complex and expensive jigsaw, and attempts to focus attention and energies on restricting expenditure in this one area fail to recognise the wide-reaching implications of pain management. Investment in effective interventions and programmes which deliver relief from pain and suffering and reductions in disability levels will generate both economic and social returns that more than re-pay the original investment. In order to develop such a mode of thinking it is essential that "policy makers are fully aware of all aspects associated with the costs of pain and its management" <sup>77</sup>.

## **4.5. COSTS TO BENEFITS AGENCIES**

In the UK, the two health conditions most clearly associated with receipt of Incapacity Benefit (IB) are musculoskeletal disorders and mental health problems. These disorders comprise more than 50% of sick certification and although their diagnostic accuracy may be questionable, they are undoubtedly influenced by social and cultural factors. Until recently musculoskeletal disorders have comprised the largest group of IB claimants in the UK, but for reasons that are unclear and probably multi-factorial, those presenting with minor mental illness have now “overtaken” them. However, musculoskeletal complaints, predominantly mild to moderate in severity, and often with no clear or consistent underlying pathology, account for 23% of IB recipients, and therefore account for a significant proportion of incapacity for work <sup>37</sup>. Given that around 65-75% of IB claims are for health problems that have a limited or inconsistent pathological basis for incapacity <sup>11</sup>, this once again highlighting the limitations of applying the biomedical model to understanding and managing pain, as psycho-social factors are of particular importance in understanding incapacity for work.

In economic terms, incapacity benefits represent a cost to the Government but a gain to the recipient, with a neutral impact on society overall. However, in an environment of constraints on levels of public expenditure, the opportunity cost associated with increasing benefits expenditure can be significant, while the long-term effect of inactivity and reliance on benefits can result in severe social and health-related problems that are associated with a culture of worklessness <sup>29</sup>. The exacerbation of problems that result from prolonged periods out of work also highlight the need for the development of early and effective interventions to support people in remaining at work or returning to work as quickly as possible is essential.

A greater emphasis needs to be placed on addressing occupational issues associated with chronic pain, in terms of clinical management and government policy and legislation. There is little evidence that low back pain interventions focus on ‘return to work’ as the desired outcome <sup>78</sup> and, even when it has been investigated, the criteria for identifying return to work have not been clear <sup>79</sup> and patient groups have been critical of a lack of vocational rehabilitation <sup>80</sup>.

## **4.6. THE IMPACT OF PAIN ON QUALITY OF LIFE**

The estimates of the economic burden associated with pain fail to do justice to the extent of suffering and reduced quality of life experienced by patients. Pain affects everyone to varying degrees; for some it may be the briefest of acute sensations, but for others it is a permanent feature of their lives. Its effects on well-being can be wide reaching, and lead to depression, sleep disturbance & fatigue, decrements in physical and cognitive



functioning, and changes in the mood, personality, and social relationships of the sufferer  
71.

Without adequate treatment, people with pain are often unable to work, or even to carry out the simplest of tasks of daily living. This often leads to problems such as depression or stress which then compound the problems caused by the physical pain. It has been estimated that in the UK there are 2,150 million chronic pain days per year, based on a prevalence of chronic pain of 10% <sup>81</sup>, while if the World Health Organization prevalence estimate of 22% was used <sup>82</sup>, there would be 1,200 million chronic pain days per year in the Netherlands, 2,400 million in Canada, 4,700 million in France, 6,600 million in Germany and 21,500 million in USA. In addition to the impact that these 'pain days' have on individuals' quality of life, other family members are also adversely affected as adjustments have to be made to adapt to the chronic pain problem <sup>83-85</sup>.

Chronic pain and musculoskeletal disorders are associated with some of the poorest quality-of-life indices <sup>86</sup>, particularly in relation to bodily pain and physical functioning <sup>87</sup>. In patients referred to a Danish multidisciplinary pain centre, Becker et al <sup>88</sup> showed that the severity of impairment was equal to or lower than patients with cardiopulmonary diseases and major depression, their Psychological General Well-being Scale scores were lower than those with hypertension and gastrointestinal problems, while they also displayed high levels of anxiety and depression as measured by the Hospital Anxiety and Depression Scale. In a study of over 600 patients attending a chronic pain clinic in Sydney, Australia, there were greatly reduced SF-36 domain scores between clinic patients and Australian norm values <sup>89</sup>. Relatively low SF-12 scores were also demonstrated in a European study on chronic musculoskeletal pain, which also highlighted that up to 57% of respondents were in constant pain and between 15% and 22% were in daily pain <sup>61</sup>. The cost of pain in terms of suffering and impact on quality of life is impossible to quantify, yet it is clear that it comes at a high price in terms of an individual's physical, psychological, and social well-being.

#### **4.7. MANAGEMENT OF CHRONIC PAIN: THE EVIDENCE BASE**

Policies relating to pain and its management need to be built upon a firm evidence base. The efficacy of treatments and the provision of services need to be established if timely and effective interventions are to be put in place. Evaluation of interventions for pain can be rather varied, particularly in view of the wide reaching effects of pain on individuals and society and consequently the high number of outcome variables by which its effects could be assessed. "Pain is a personal experience which makes it difficult to define and measure" <sup>81</sup>. While it is difficult to be completely objective, it is possible to envisage a number of criteria against which to assess the effects of interventions and pain management programmes in terms of symptomatic relief, reduced disability, or improvement in quality of life. It is also important to establish the cost-effectiveness of treatments or interventions

relative to other options, as this is an important aspect of increasing the willingness of the government, insurers and other sources of funding to implement a specific intervention <sup>90</sup>.

The evidence-base for the effectiveness of interventions and management strategies in both acute and chronic pain is large <sup>91</sup>. In addition, it has been argued that, in selected populations, patients managed through multidisciplinary programmes have lower costs, return to work more frequently and experience greater pain control than those who are managed with more traditional biomedical methods <sup>92</sup>. There is also an increasing evidence-base demonstrating that psychological interventions, particularly Cognitive Behaviour Therapy (CBT) are effective in managing pain <sup>93 94</sup>. Larger effect sizes for CBT treatment groups were found on all outcome measurements than for waiting list controls <sup>94</sup>. Furthermore, CBT was found to be more effective than alternative treatment controls on the dimensions of pain experience, measures of positive cognitive coping and appraisal, and reducing behavioural expressions of pain. Hypnosis, relaxation, imagery, and CBT have also been found to be effective, particularly in reducing reports of cancer-related pain <sup>95-98</sup>. In addition it has been argued that less emphasis on technological solutions, and a shift towards the bio-psychosocial model, would be an efficient use of limited resources in pain management <sup>99</sup>. However, it has also been argued that the evidence-base remains somewhat inconclusive <sup>8-10</sup> and that further work is required to assess the effectiveness of early interventions in retention and rehabilitation contexts and in targeting risk factors for prolonged pain and persistent disability. Nonetheless, there is a clear need for policy makers to adopt a broad, strategic perspective in determining issues relating to service provision and resource allocation in relation to chronic pain and its management.

There is a need to assess the effectiveness of different types of intervention in reducing the impact of pain in view of the shortage of multidisciplinary pain services. In addition to exploring the role of primary care physicians and other health professionals, there is potential to develop interventions designed to elicit social and cultural change. These larger-scale social interventions are the public health campaigns designed to modify beliefs and behaviour. In terms of pain, there would include the Australian <sup>100</sup> and Scottish studies <sup>101</sup> that were successful in changing attitudes about managing back pain, where beliefs that bed rest was beneficial shifted to keeping active. The Welsh Backs Campaign was launched by WAG in the autumn of 2006 and will attempt to extend this work in Wales by promoting the 'keep active' message to the public and health professionals. The campaign will also involve providing guidance for GPs on managing acute back pain (including how to address psychosocial and occupational issues) in an attempt to reduce the impact of non-specific back pain on the Welsh population. Evaluation of the success of this initiative is ongoing, and the initiative is an encouraging indication that government is taking on board the importance of psychosocial and occupational issues in managing pain and are making moves towards addressing these issues.

The methods used to reduce the economic cost of pain in areas of multiple social deprivation need to be given careful consideration. In these regions, there are high rates of poor health, unemployment and incapacity for work, and where there are inequalities in health and in access to healthcare. There is increasing evidence of the link between pain related disability and social exclusion. In communities where there are multiple indices of deprivation, dependency on benefits extending across subsequent generations may present, and social norms surrounding work may shift <sup>29</sup>. In these contexts, cultural beliefs about illness and disability may need to be changed, in combination with more general improvements in the health and prosperity of the area. Furthermore, the implementation of policies which have been shown to be effective elsewhere may require modification under these circumstances. For example, within the context of state benefits, 'conditionality' imposes an obligation for an individual to undertake certain personal actions in return for a certain level of financial support (e.g. applying for jobs, attending work focussed interviews). However, it may be argued that this can only be philosophically and morally justified if considerable care is taken to avoid burdening people who are already disadvantaged. Moreover, it can only be a fair process if there is a real, rather than a theoretical prospect of suitable work in which the person exiting benefit can engage. For example, in the case of the ex-coalfield areas such as Merthyr Tydfil in the South Wales Valleys, the nature and magnitude of multiple disadvantage and deprivation that exists among a substantial proportion of the population (where many individuals will have a low level of skills and limited, if any, qualifications), together with the limited availability of jobs that command a high enough wage to make work pay, threaten the validity, integrity and applicability of conditionality in this complex context. Though conditionality may be an effective approach for those who are closest to the labour market, it may fail the most disadvantaged and marginalised members of society. In reducing the impact of musculoskeletal pain and other health conditions on work in areas like this, interventions that fail to take into consideration the socio-economic context of the community are unlikely to succeed <sup>2</sup>.

There is evidence that effective treatments for pain exist, particularly when psycho-social issues are tackled as well as medical issues in multi-disciplinary services. It has been strongly advocated that society has an obligation to reduce levels of pain and restore normal functioning, based upon both moral principles and economic reality <sup>99</sup>. Yet it is very evident that pain is not given the attention it warrants based on prevalence rates, its economic cost, its detrimental effects on quality of life and priority attached to it by patients and in light of the existence of effective interventions. For example, pain management programmes were regarded as relatively high priority in a survey of nearly 3,500 patients in Scotland <sup>102</sup> and yet the availability of such programmes is limited <sup>103</sup>. The situation is likely to deteriorate due to changes in demographic factors, including the

increased life expectancy of the population <sup>104</sup> unless policy makers give increasing priority to the impact of chronic pain and pain related disability.

## **4.8. PAIN AND POLICY**

This review has sought to demonstrate the wide-reaching impact of chronic pain from the economic, social and quality of life perspectives. In addition, the evidence base for pain management interventions and management strategies has shown that the introduction of effective, targeted strategies implemented sufficiently early in the lifecycle of the condition can reap positive benefits and offset many of the negative consequences that have such adverse effects on individuals' lives and their contributions to society. In this section we explore the nature and extent of governments' responses to the pain and disability burden and offer a series of recommendations for developing a broader agenda within which to contextualise and manage the problem of pain in society.

A wide variety of government policies and priorities are relevant to reducing the burden of chronic pain, since pain is such a complex multi-dimensional experience. While there are important policy statements, documents and initiatives that seek to address some of the issues, it is noticeable that they fail to achieve the goal of what has been termed "joined-up thinking" <sup>77</sup>. It has been evident that the chronic pain problem cannot be resolved without joined-up approaches. It requires all relevant governmental departments and agencies and non-governmental organisations alike to think outside their own particular box and develop a multi-agency problem targeted series of policies.

The adoption of a bio-psychosocial model is essential in understanding the complex and dynamic relationships involved in managing chronic pain patients, bringing into consideration their environmental, social, economic loci and access to facilities and professionals. The development of a series of sharply focused interventions designed to address the wide-ranging needs of such patients cannot be achieved without an appropriate awareness and recognition of the so-called bigger picture.

Well-meaning and in many ways successful policies emanating from DoH, DWP and HSE, focus on issues such as health promotion, illness prevention, and occupational rehabilitation, but these fail to reach all of the systems that chronic pain conditions affect. It is not that the will does not exist. *'Health, work and well-being - Caring for our future'* <sup>4</sup> highlighted the importance attached to joining up the elements relating to the health/work interface:

*"While much good work, both inside and outside Government, is already going on to improve the health and well-being of working age people, we need a strategy that will bring together all the elements. If we co-ordinate our approach and*

*identify gaps where we need to carry out further work, then we will achieve much more to help that improvement in health and well-being. Health, work and well-being - Caring for our future demonstrates our commitment to making a real difference to the health and well-being of working age people. It also forms a key component of the welfare reform, public sector reform and public health agendas"*

[p.4-5]

'Securing Health Together: a long-term strategy for England, Scotland and Wales'<sup>5</sup> emphasised the pluralistic nature of the problems and their solutions, with a need for concerted, concentrated, multi-factorial, multi-dimensional and multi-agency approaches to target collective efforts on the areas that need it most.

More recent policy initiatives also display similar noteworthy aims and objectives, with a clear recognition that there must be partnership working if the proposals are to be successful, with a whole systems approach evident and a culture of collaboration across all stakeholders. However, there are critical gaps in the process of achieving a whole-systems approach where the relevant pieces are joined-up. For example, the significance of the role of primary care and General Practitioners in particular in encapsulating a policy perspective within which to address the issue relating to sickness absence management and rehabilitation, arising from chronic pain and other health problems has been widely documented. However, in relation to the recent DoH contract for GPs <sup>48</sup> in terms of patient management and indeed remuneration, there is no explicit reference or incentive scheme in place to reward those who take active steps in supporting individuals to remain in or return to work.

The adoption of a policy framework, which recognises the interdependence between the economic prosperity of a nation and the wider health and social benefits that emerge as a result, has been advocated <sup>105</sup> and would mean that in addition to achieving direct targets, such as raising economic activity rates, improvements in the health of communities and reducing poverty would also emerge from all public policy initiatives. Health care policies which focus on waiting lists do little to deal with the determinants of health problems in the first place, whereas policies designed to retain people in employment and return people to employment would result in reduced pressure on limited health care resources.

An integrated approach is essential in understanding the impact of health on work. Initiatives that bring together information from a variety of sources, and encourage cross-agency work are essential in informing policy development. By working across agencies and disciplines the evidence base can be gathered on a number of issues, including;

- the cost of pain to individuals, employers and the community can be estimated
- current provision of services in the area can be assessed
- recent theoretical and clinical advances in the understanding and management of pain

This would enable recommendations to be produced about providing the right structure and support for people with pain to be able to continue to, enter or re-enter work.

## **4.9. THE BURDEN OF PAIN: SUMMARY AND CONCLUSIONS**

Pain has a major impact on labour market participation, affecting performance and productivity and being one of the major reasons why people exit labour markets prematurely, with highly significant impact for employers and benefits agencies alike. The estimates of the economic burden associated with pain fail to do justice to the extent of suffering and reduced quality of life experienced by sufferers, especially those whose condition becomes chronic. The rationale for early and effective interventions is therefore apparent, but the evidence-base of the effectiveness of early interventions in retention and rehabilitation contexts and in targeting risk factors for prolonged pain and persistent disability remains somewhat inconclusive and it is evident that further work is required<sup>8-10</sup>. Nonetheless, despite the high impact of pain on individuals and society it is contended that pain and its management do not appear to feature prominently in government health policies and priorities.

The burden of suffering that pain imposes on individuals and the enormous costs which society has to bear as a result clearly demonstrate that policy makers and decision-makers alike should adopt a broad, strategic perspective in determining issues relating to service provision and resource allocation. However, differentials between the demands placed on health services for treatments for pain relief, and other aspects of healthcare and the resources available to meet such needs continue to be major headaches for those involved in policy making, decision-making, commissioning services and the provision and delivery of healthcare services. In attempting to move the agenda forward, it has been advocated that decisions relating to patient management are made with regard to the three Es of effectiveness, efficiency and equity<sup>77</sup>, to which we would now add a fourth - that of ethics<sup>60</sup>.

The cost of pain for individuals and society is high. It causes considerable suffering, places a strain on health services, and it creates an economic burden through loss of work & suboptimal performance. In terms of government policies and priorities, the problem of pain needs to be tackled urgently, with a focus on reducing the prevalence of pain, improving management and access to treatment, and availability of information on pain

and occupational issues. Based on the evidence presented in this review, the following recommendations are made on how to bring pain in to policy making:

- The actual costs of pain needs to be demonstrated to politicians to increase its priority and the resources allocated to reducing its impact
- Policies need to prioritise improvements in:
  - The provision of pain services
  - Training and support for primary care staff
  - Provision of information/education for people with pain on issues such as their rights under the Disability Discrimination Act (DDA), working with pain, self-management of pain, that could contribute to promoting adjustment and keeping active
- A greater emphasis needs to be placed on occupational issues
- Further research is required to improve treatments, the results of which should be used as the evidence-base for government policies on provision of services for pain.

It is vital that these issues relating to pain are moved higher up in the political agenda and feature more prominently in government policies. It is also essential for a joined-up cross-agency approach to be adopted, involving all those who have an interest in preventing ill health at work, treating ill-health and rehabilitating those who have suffered from pain. Strategies need to be put in place, backed up with the necessary resources, so that the recommendations set out in policy documents can actually be implemented within a reasonable time-frame so that the burden of pain on individuals and society can be reduced.

## **5. HEALTH, WELL-BEING AND WORK**

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The relationship between well-being and work is complex and bi-directional. The level of disability and incapacity for work that people report as a result of health complaints is poorly explained by the traditional bio-medical model and is better understood from a bio-psychosocial perspective <sup>11</sup>. The negative effects of worklessness in terms of health and well-being are well documented; however, work can vary widely in its nature and quality and the potential benefits of being in work for health and well-being have not yet been adequately investigated <sup>12</sup>. Remaining at work or returning as soon as possible can be beneficial to people with health problems; it improves recovery and health outcomes, reduces the negative social, psychological and physical effects of long term sickness absence, and reduces poverty <sup>12</sup>. While work in general is thought to be beneficial for health and well-being, work varies widely in its nature and quality <sup>12</sup>, and there is evidence that work stress is associated with mental disorders <sup>13</sup>. There is a consensus that in general the risks of worklessness by far outweigh any risks associated with work <sup>12</sup>, but in advocating work as being beneficial there is a moral obligation on the part of politicians, scientists and employers alike to ensure that work is as positive an environment as possible for health and well-being. Further research is required to establish under which circumstances work is beneficial to health and well-being and, in Merthyr Tydfil, understanding these issues is particularly important for the health and prosperity of the community.

### **5.1. THE IMPACT OF HEALTH ON WORK**

Health problems can adversely impact on work in a number of ways, which can broadly be categorised under the headings of absenteeism and presenteeism. Absenteeism can be defined as absence from work through ill health; it is the very lowest level of occupational performance. The most recent cost estimate from the Confederation of British Industry (CBI) estimated a loss of £12 billion in 2001 across British industry as a result of absent employees. In 2006, UK employees were absent for an average 3.5 per cent of the time they were due to spend working. An estimated 40 million working days are lost each year in Britain due to ill health and injury. Sickness absence costs the British economy an estimated £13 billion each year <sup>14</sup>, although the quality and accuracy of available data on absence and sickness absence is variable <sup>14 15</sup>. One-fifth of absences are classified as long term (i.e. four weeks/20 working days or longer) and on average, in 2006, one per cent of the UK workforce was absent from work due to long-term sickness. It is estimated that 12 per cent of employees on long-term leave are covered by the Disability Discrimination Act.



Back pain, musculoskeletal injuries, acute medical conditions and common mental health problems are the most common causes of sickness absence. In the public sector, mental ill-health and stress were identified as the main causes of long-term sickness absence for non-manual workers; musculoskeletal injuries and back pain most affected manual workers<sup>106</sup>. It has been argued that as many as 90% of persons with occupational non-specific back pain should be able to return to work in a relatively short period of time<sup>107</sup>. However, what is evident from the literature is that many obstacles and barriers can prevent this from occurring. The implications of this are significant, as the longer someone is out of work, the more distant they become from the labour market and the more difficult it is for them to return to work<sup>11</sup>, with major economic consequences. For example, the indirect (productivity) cost of back pain in the UK in 1998 was estimated to be between £5 billion and £10.7 billion, depending on the approach employed<sup>6</sup>.

'Presenteeism' can be defined as being at work in spite of illness. However, this is a broad definition and can encompass a whole range of scenarios, referring both to the way that health impacts on work for people are able to attend work as well as individuals who attend work when they are too unwell to do so. It has been estimated that 32% of working adults in the United States have a chronic illness that interferes with their work<sup>108</sup>, and further estimates of productivity loss to employers have been suggested to range from 3 to 11 hours per week<sup>21</sup>. The economic costs of presenteeism can outweigh those of absenteeism, and there is increasing interest in understanding this phenomenon<sup>16 17</sup>. However, evidence of the costs of lost performance in those employees who attend work when they should be off sick is limited.

'Sub-optimal performance' describes an employee who is at work but not performing tasks to their full capabilities. The degree to which an individual is unable to function in his/her work is dependent upon the specific job tasks and the environment in which that individual works. Sub-optimal performance is used interchangeably with presenteeism in the literature, with the majority of research focusing on 'presenteeism'. The term productivity is often used to define outcomes from an individual or organisational perspective. In its simplest form productivity is the ratio of aggregate output to the sum of input, productivity may also be measured as output per worker or output per labour hour<sup>18</sup>. Productivity costs can be defined as the productivity lost or the costs incurred to maintain productivity in an employees absence<sup>109</sup>. Measurement of productivity depends to a greater or lesser extent on the type of employment an individual undertakes. For example Burton et al.<sup>110</sup> found that presenteeism accounted for higher productivity losses in telephone operatives with migraine, where productivity was measured here as handle time per call and time unavailable for calls. Brouwer et al.<sup>18</sup> investigated the relationship between absenteeism and presenteeism and found that 25% of absentees experienced a loss of productivity

before their absence and 20% after absence. This demonstrates that absenteeism and presenteeism are intrinsically linked and should be considered in relation to one another.

The drivers of absenteeism and presenteeism are likely to be complex and multi-factorial. Studies of presenteeism and absenteeism to date have focussed predominantly on quantifying absence and loss of productivity, and the identification of organisational or individual risk factors (e.g. <sup>111 112</sup>). Perceptions of work, including clarity of roles, job demands and control, and the quality of relationships and support are related to sub-optimal work performance <sup>20</sup>. Perceptions of work and impact of symptoms have been found to have a greater influence on performance than on sickness absence, and the impact of perceptions of work on absence and performance can be greater than that of objective work characteristics <sup>20</sup>. These perceptions of work are often potentially modifiable and may therefore be useful targets for worker- and workplace-centred interventions that aim to improve well-being in work and reduce the impact of health on work.

The illness flexibility model <sup>19</sup> postulates that *attendance requirements*, the negative consequences of absence for the employee (e.g. impact on work tasks or colleagues), and *adjustment latitude*, the opportunities to work despite illness (e.g. moderations to work), act as 'push and pull' factors in determining sickness absence and attendance behaviour. In sociological terms, the moral dimension to health has been noted in a wide range of medical sociological materials <sup>113-116</sup>. Compounding the moral dimensions of health with that of the moral dimension of work (and being seen to work), which may lead to a desire to prove one's self 'worthy' to others by not taking time off work. Recent qualitative research in the South Wales region found that a culture of presenteeism was the norm, particularly in lower socio-economic groups <sup>117</sup>. This may be associated with the traditional protestant work ethic often found in accounts of health and illness, which equates work with virtue and therefore not having a 'legitimate' reason for work absence invites scorn <sup>113 118</sup>. These social and cultural norms surrounding health and work can be strong influences on attitudes and behaviour, but have not yet been adequately investigated.

## **5.2. BIO-PSYCHOSOCIAL APPROACHES TO HEALTH AND WORK: FLAGS AND SYSTEMS MODELS**

The bio-psychosocial model, which has been used to explain and manage conditions classified as musculoskeletal problems <sup>119 120</sup>, has helped to clarify thinking about the development of chronicity, and has highlighted the benefits of earlier intervention and targeting of modifiable risk factors. There is evidence that a wide variety of psychological, behavioural and social factors can influence disability and recovery <sup>21</sup>. The biopsychosocial model places psychosocial factors as a key component of the illness experience, both influencing and being influenced by physical factors and symptoms. Much of the research on

risk factors for disability and incapacity for work has been carried out with musculoskeletal disorders and pain. The 'Flags' system was developed by to identify psychosocial risk factors for disability and impeded recovery for musculoskeletal complaints. The term 'Red Flags' has been used to describe signs or symptoms of low back pain indicative of serious underlying pathology as part of a system of triage for patients requiring immediate specialist medical referral<sup>121 122</sup>. Kendall et al.<sup>56</sup> coined the term "Yellow Flags" to encompass the psychological and social/environmental risk factors for prolonged disability and failure to return to work as a consequence of musculoskeletal symptoms. The "Yellow Flags", although not necessarily pathological, indicate a heightened risk for a problematic course of recovery. The original monograph included a psychosocial screening questionnaire, and assessment guidelines in the context of a general management plan and therefore were much broader in scope than the Red Flags, which offered no recommendations per se for treatment.

In 2000, Main and Burton argued that in occupational contexts the social/environmental risk factors could be divided according to whether they related to the *perception of work* or more objective features of work, such as *working conditions*; these were labelled as "Blue Flags" and "Black Flags" respectively<sup>123</sup>. A similar, but not identical division was proposed by Sullivan *et al.* in 2005<sup>124</sup>, who suggested that psychosocial risk factors could be defined according to whether they exist 'within' the individual (e.g. beliefs and fears), which they labelled Type I psychosocial risk factors, and those that resided mainly 'outside' the individual (e.g. the workplace and insurance systems), which they termed Type II psychosocial risk factors. In the context of interventions, these are referred to respectively as "worker-centred" and "workplace-centred" interventions.

Recently "Orange Flags" have been added to the system, referring to psychopathology<sup>125</sup>. Yellow Flags should be thought of as aspects of *normal* psychological processes. However, they have sometimes been confused with psychiatric disorder, such as major mental illness or major personality disorder, including illicit drug use and ongoing forensic involvement. Main et al.<sup>125</sup> distinguished between Orange Flags that are indicative of inappropriateness for pain management, and Orange Flags that call for referral to specialty mental health service. These include the following:

- Active Psychiatric Disorder
- Major Personality disorder
  - Illicit drug use
  - Current forensic involvement
- Major communication problems

Orange Flags can be thought of as the psychiatric equivalent of Red Flags in that they require specialist assessment /referral and render the individual unsuitable (at that time) for a straightforward biopsychosocial approach.

The Flag system assumes that an adequate understanding of the problem requires consideration of both the injured worker and the individual's social and occupational context. The distinction is made between clinically focused Flags (Red, Orange and Yellow) and occupational Flags (Blue and Black). It also distinguishes between the individual's perception of the work situation and the objective features. Although this system has strengths and weaknesses <sup>126</sup>, it has been useful in conceptualizing the multi-factorial nature of disability and incapacity for work and in identifying potentially modifiable risk factors that could be targeted for intervention <sup>21</sup>. The psychological Yellow Flag variables addressed by the bulk of recent clinical research are pain-related fears (e.g. fear of pain, fear of re-injury), catastrophic beliefs or perceptions in relation to pain, self-efficacy, low mood, passive/avoidant and/or emotion focussed coping strategies. However, less research has been carried out on Blue and Black Flags and little is known about the interactions between the various components of the Flags Model. Research to date has focused primarily on musculoskeletal complaints and less is known about how these risk factors relate to the impact of other common health problems.

The Flags Model demonstrates how an individual with a health problem is part of a complex system, involving independent effects and interactions between the individual, their immediate work environment, the organisation, healthcare and other services, and socio-economic context on a micro and macro level. What happens in any one or combination of the parts of the system has the potential to influence how health impacts on work. Thus, a whole-systems approach is required both in understanding and managing the impact of health on work. Further research is required to investigate how the Flags fit together and to assess their applicability to other health problems, such as mental health complaints, which are now the most common complaints given as reasons for long term incapacity for work in the UK <sup>11</sup>.

### **5.3. IMPROVING WELL-BEING IN WORK: WORKER-CENTRED AND WORKPLACE-CENTRED INTERVENTIONS**

There is a clear need for a specific work orientation in programmes for managing common health problems, but occupational issues are often ignored. Interventions in the workplace can be either worker-focussed interventions (Type I) or system/organisation focussed (Type II) <sup>124</sup>, or a combination of both. Within the Flags Model framework, these types of intervention address Yellow and Blue Flags (worker-focussed) and Black Flags (workplace

focussed). Table 3 outlines the Flags Model and recommendations for action for each component of the system.

**Table 3. The Flags Model and implications for action**

Flag	Description	Recommendation for action
<b>Red</b>	Physical pathology	Triage for specialist medical opinion Reassess if appropriate
<b>Orange</b>	Psychopathology	Triage to mental health specialist Reassess after specialist treatment
<b>Yellow</b>	Psychosocial factors: Clinical	Bio-psychosocial management Develop integrated approach to reactivation, with removal of perceived obstacles to recovery
<b>Blue</b>	Psychosocial factors: Occupational	Identify modifiable work perceptions Develop integrated approach to reactivation, with removal of perceived obstacles to recovery Consider liaison with employer in context of RTW or work retention plan
<b>Black</b>	Organisational factors	Appraise significance as potential rehabilitation “show-stoppers” Check Black Flags with employer and investigate possibility of accommodation Reset patient expectations and develop integrated approach to reactivation OR do not accept for treatment

### 5.3.1. Worker focussed interventions

Interventions can take a number of different perspectives dependent upon the desired outcome, and may be clinically or occupationally focused.

#### ***Clinical interventions***

Clinical interventions are aimed at reducing pain and distress, enhancing coping strategies and increasing function, such as exercise and physical therapy or pain management programmes. Exercise and physical therapy is common after injury to enable an employee to return to work, and has been demonstrated to be beneficial when used in conjunction with other approaches<sup>127</sup>. However, exercise based interventions are often evaluated in terms of functionality and in the workplace ability is evaluated by “performance” in specific tasks. Return to work or maintenance of employment is not only influenced by

biomechanical factors but also by psychosocial factors and it may be more useful to assess more holistic interventions. For some employees the use of individually designed pain management programmes may be sufficient to enable return to the workplace or continued employment, as they commonly focus on improving an individual's functional ability as well as their coping strategies. It may be that work related goals could be incorporated into these programmes, as programmes without such a specific work focus have been demonstrated to have little impact on return to work rates<sup>94 128</sup>.

### ***Occupationally focussed interventions***

Return to work initiatives have been instigated by a variety of organisations, and there has been a particular focus on back pain<sup>129</sup>. There are four main types of intervention focussed specifically at employment; back schools, functional restoration, modified work and return to work initiatives. Back schools combine education with exercise and are widely used in low back pain rehabilitation, they can be carried out in the workplace or clinical setting. Functional restoration programmes are based on quantitative measurement of physical and functional capacity combined with psychosocial assessment of barriers to recovery. Modified work takes account of individuals perceptions of function and limitation, and reorganises job duties accordingly, a review of the modified work literature demonstrated that modified work programmes facilitated return to work for both temporarily and permanently disabled workers<sup>130</sup>. Evidence for the use of back schools and functional restoration programmes is limited whilst the use of modified work may be beneficial as part of strategy to reduce work disability<sup>21</sup>.

### **5.3.2. System/Organisation focussed interventions**

Organisation-focussed interventions are aimed towards tackling Black Flags that may impede an individual's ability to remain in work or return to work after a period of absence. Examples of organisation-focussed interventions are absence management strategies, health management policies, return to work programmes and targeting of system related psychosocial risk factors. Absence management requires the recognition of the interdependence of individual and organisational well-being<sup>131</sup>. There are a number of strategies in place that aim to better manage absence, these include facilitating communication, addressing the social climate at work and the importance of relationships amongst colleagues<sup>132</sup>, the role of the supervisor in the implementation of absence policies<sup>133</sup>, and the impact of these policies on absence. Health management policies in the workplace include health promotion, disease prevention, safety management and organisational development<sup>134</sup>, with employers now taking more responsibility for providing these services for the rehabilitation of their employees.

Interventions can be complex or simple, and may involve working both at the level of the worker and the workplace simultaneously. A recent systematic review <sup>135</sup> found that interventions that were found to be effective in improving psychological health and reducing absence had employed training and organisational approaches to promote problem solving approaches, improve communication and increase support and feedback. For mental health problems in particular, improving communication with employers, colleagues, and health professionals is likely to be key in enabling people to work <sup>28</sup>. Therefore, there is significant potential to reduce the impact of health on work using occupationally focused interventions. The majority of research in this area has focussed on musculoskeletal complaints, but the applicability of these to other common health problems should be further investigated.

## **6. THE WIW STAGE 2 RESEARCH**

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The high impact of health problems on work, particularly mental health and musculoskeletal complaints, is evident in terms of absenteeism, presenteeism and long term worklessness. This has serious implications for individuals in terms of their quality of life and has wider effects for employers, health services, government agencies and society as a whole and reducing the impact of health on work could therefore have wide-reaching benefits. This is particularly so in Merthyr Tydfil, where a high proportion of the population faces multiple disadvantages in relation to health and work. Disability and incapacity for work are multi-dimensional problems and interventions that aim to reduce the impact of health on work are likely to require a multi-faceted joined up approach.

Stage 2 of the WiW research set out to investigate health, well-being and work in Merthyr Tydfil using the Flags Model as a conceptual framework, with regional and organisational context considered as an integral part of understanding these issues. In order to establish how health impacts on work and to identify potential for interventions to improve well-being in work, this research focused on employees of major organisations in Merthyr Tydfil. A mixed-methods approach was employed to establish how health impacted on work performance and absence. The role of potentially modifiable psychosocial factors that moderated this relationship was investigated. Stage 2 centred around two projects; a quantitative longitudinal employee survey and a qualitative study using both focus groups and semi-structured interviews.

### **6.1. AIMS OF THE WIW STAGE 2 RESEARCH**

The overall aims of Stage 2 of WiW were to:

- Improve understanding of the complex relationship between health and work from a bio-psychosocial perspective
- Assess the impact of health on work in terms of absence and performance in major employers in the Merthyr Tydfil area
- Identify challenges in and facilitators of remaining at or return to work for employees with health problems
- Scope relevant policies, procedures and services currently in place within participating organisations to support work retention and RTW
- Explore the potential for developing evidence-based interventions to improve well-being in work, and facilitate work retention and return to work.



## **7. WIW EMPLOYEE SURVEY**

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### **7.1. INTRODUCTION TO THE WIW EMPLOYEE SURVEY**

When an individual has a health condition that impacts on their well-being at work, whether or not they remain at work or return to work after a period of absence is a complex issue influenced by medical, social and economic, psychological, and occupational factors. Previous research has shown that an individual's perceptions of work, as well as objective work characteristics and conditions of employment, are occupational risk factors<sup>125</sup>. In a UK study, perceptions of work and impact of symptoms were found to be associated with self-rated performance and sickness absence<sup>20</sup>. Perceptions of work and impact of symptoms had a greater influence on performance than on sickness absence. The findings also indicated that perceptions of work were more influential in determining the impact of health on work than objective work characteristics<sup>20</sup>. However, there have been relatively few investigations within organisations of the impact of health on performance and absence, and further research is required.

The illness perception, responses to illness and the work environment are all dynamic and can change considerably over time. While cross-sectional studies provide a useful 'snapshot' of the relationship between health and work, a longitudinal approach is required to investigate how the impact of health on work changes over time. There are several examples in the literature of how longitudinal analysis can provide unique and novel information on people's experiences of health problems and the way that they impact on their lives, and there are several methods of analysing longitudinal data - detailed discussions of which can be found in a number of articles<sup>136-140</sup>.

Amongst the more popular methods is MLM, which is particularly useful in analysing data where data points are 'nested' within levels rather than being independent of each other<sup>141</sup>. For example, if we wanted to look at educational test performance based for students across a number of schools, their tests scores could be influenced by their individual characteristics (e.g. aptitude/IQ), but could also vary according to which school they attended<sup>a</sup>. In this example, pupils would be said to be 'nested' within schools, with individual being termed a 'level 1' variable and school a 'level 2' variable. MLM would allow us to investigate how much of the variance in tests scores was due to level 1 variables (e.g. characteristics of the pupil) as opposed to level 2 variables (e.g. quality of teaching at the schools). However, the method can also be used to analysis relationships between variables at different time points (level 1) nested within individuals (level 2). "True" MLM in the

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<sup>a</sup> Further information on MLM is provided by the Centre for Multilevel Modelling at <http://www.cmm.bristol.ac.uk/team/mmsage.pdf>

context of repeated measures in individuals involves producing a single regression equation to explain variance in a dependent variable predicted by within-person and between-person variables<sup>136</sup>. A cross-sectional baseline survey could tell us how much impact health has on sickness absence and presenteeism and whether this varies according to characteristics of the individual (e.g. gender, age) and the type of work (objective and perceived characteristics). However, a longitudinal study analysed using MLM would take this further by allowing us to establish how much these variables change over time, and assessing the independent effects of relatively stable variables (e.g. gender, age, having a long-term health problem) as opposed to changes in health and work within-person (particularly perceptions of work) over time.

This study focused on Yellow, Blue and Black Flags in an organisational context, investigating how health impacts on work in terms of both absence and performance and identifying the psycho-social factors that moderate this relationship. A survey was developed based to explore the complex bio-psychosocial relationship between health, well-being and work using the Flags Model as a conceptual framework. The survey focused on the role of 'Blue Flags' in particular - the psycho-social characteristics of work. It consisted primarily of existing validated measures of health, well-being, and work characteristics (objective and perceived), uniquely combined to specifically address the aims of this research, focusing primarily on modifiable risk factors - that is to say, those which could potentially be targeted for interventions at an individual or organisational level. A longitudinal approach was employed to examine the relationship between health, work performance, sickness absence, work characteristics and perceptions of work in two large organisations in Merthyr Tydfil over a 12-month period.

## **7.2. AIMS AND OBJECTIVES OF THE WIW EMPLOYEE SURVEY**

The aims and objectives of this study were to:

1. Set the organisational context for the study and scope relevant current policies and procedures (Black Flags)
2. Develop a multi-dimensional measure to investigate the relationship between health, well-being and work from a bio-psychosocial perspective (focusing on Yellow and Blue Flags)
3. Assess the impact of health on work in terms of absence and presenteeism (Yellow Flags)
4. Investigate the relationship between work characteristics (objective and perceived), health and well-being (Blue and Yellow Flags)
5. Establish whether the objective and perceived characteristics of work moderate the impact of health on work (Blue and Yellow Flags)

6. Investigate how within-person changes in health and perceptions of work over time relate to absence and presenteeism.

### **7.3. WIW EMPLOYEE SURVEY RESEARCH QUESTIONS**

The primary research questions in this study were:

1. What is the impact of health on work in terms of performance as well as absence?
2. Are objective and perceived characteristics of work associated with health and well-being?
3. Do the objective characteristics of work & perceptions of work moderate the impact of health on work?
4. How does this change over time?

### **7.4. EMPLOYEE SURVEY METHOD**

An employee survey was carried out at two major organisations in Merthyr Tydfil (NG NHS Trust and MTCBC) to investigate the relationship between health, well-being and work. Data was collected at three time points: baseline, six months and twelve months. The survey was carried out primarily online, with a supplementary paper-and-pen version provided for employees without access to the web.

#### **7.4.1. Participants**

573 (14%) employees completed the questionnaire at baseline, the majority of whom were female (73%). The mean age of participants was 41.06 (SD: 10.85). The demographic characteristics of the participants at baseline are shown in Table 5.

Response rates at baseline and retention rates from baseline at six and twelve months are provided in Table 4. The overall response rate for the survey was approximately 14%; this was considerably higher for the online questionnaire (19%) than for the paper-and-pen questionnaire (5%).

**Table 4. Response rates, six- and twelve-month follow-up retention rates**

	All data	Online	Paper
Baseline	573 (14%)	505 (19%)	68 (5%)
6-month follow-up	347 (64%)	309 (65%)	38 (61%)
12-month follow-up	273 (51%)	243 (52%)	30 (44%)

**Table 5. Baseline demographics and work characteristics**

	All data	Online	Paper
<b>Demographics</b>			
Age	41.06 (SD:10.85)	40.32 (SD:10.59)	46.31 (SD:11.35)
Gender	73% female	74% female	65% female
Ethnic group	>95% White	>95% White	>95% White
Education (University degree)	169 (29%)	158 (31%)	11 (16%)
Marital status			
• Married	411 (72%)	362 (72%)	49 (71%)
• Single	98 (17%)	89 (18%)	9 (13%)
<b>Characteristics &amp; Descriptions of Work</b>			
Type of contract (Permanent)	499 (87%)	428 (87%)	61 (88%)
Supervision of other employees	275 (49%)	244 (49%)	31 (45%)
Type of work			
• Modern professional	220 (39%)	209 (42%)	11 (19%)
• Clerical and intermediate	171 (31%)	155 (31%)	16 (28%)
• Senior managers/administrators	59 (11%)	53 (11%)	6 (10%)
• Technical or craft	12 (2%)	8 (2%)	4 (7%)
• Semi-routine manual & service	8 (1%)	3 (0.6%)	5 (9%)
• Routine manual & service	11 (2%)	1 (0.2%)	10 (17%)
• Middle or junior managers	42 (7%)	37 (7%)	5 (9%)
• Traditional professional	35 (6%)	35 (7%)	0
Socio-economic status: NS-SEC method			
• Managerial & professional	372 (68%)	344 (70%)	28 (49%)
• Intermediate occupations	144 (26%)	134 (27%)	10 (18%)
• Lower supervisory & technical	16 (3%)	9 (2%)	7 (12%)
• Semi routine & routine	14 (3%)	2 (0.4%)	12 (21%)
Contracted hours (31-40 hours)	470 (83%)	433 (86%)	37 (57%)
Extra hours			
• Never	99 (17%)	90 (18%)	9 (13%)
• Occasionally	233 (41%)	211 (42%)	22 (33%)
• Often	125 (22%)	103 (20%)	22 (33%)
• Very often	114 (20%)	100 (20%)	14 (21%)
How many extra hours	8.45 (SD: 11.72)	8.45 (SD: 12.14)	8.46 (SD: 7.59)

However, it should be noted that our baseline response rate is a conservative calculation; the online response rate is based on the total number of emails sent out, which is greater than the number of workstations within each organisation and some accounts were no longer active where staff on the email list had left the organisation. Recruiting participants for surveys is notoriously difficult; the major challenges with a sub-optimal response rate relate to how representative the sample is of the parent population and with regard to the power required for statistical analysis, which are discussed in the sampling section.

A total of 539 employees of the 573 who participated at baseline, agreed to be contacted in 6 months: 34 did not want to be contacted again. Of the 539 employees invited to take part in the 6-month follow-up, 347 (64%) completed the questionnaire. The demographic characteristics of participants at follow up are provided in Appendix 2. The final questionnaire was distributed at 12 months. A total of 531 employees, out of the 573 at baseline and 6 months, agreed to be contacted for follow-up questionnaires: 42 did not want to be contacted again. Of the 531 employees invited to take part in the third follow-up, 273 (51%) completed the questionnaire (see Table 4 for retention rates). Demographic details and work characteristics associated with those who participated at 12 months are provided in Appendix 3. Comparisons were made between those who participated at baseline, with those at 6- and 12-month follow-ups, indicating no differences between groups in terms of demographics and work characteristics, and therefore, no evidence of systematic sampling bias in retention across the three time points.

#### **7.4.2. Employee survey sampling and recruitment**

The workforces at both organisations were invited to take part in the survey, estimated at approximately 4000 employees in total. The aim of this was to capture a range of views and experiences across the organisations; e.g. from manual workers, managers and shift workers. The primary method of recruitment was via an e-mail invitation to employees. To avoid excluding key occupational groups, employees who did not have e-mail accounts were provided with printed copies of the survey. To maximise the response rate several strategies were used:

- Information about the study was clear and concise
- A prize draw (gift vouchers) was offered as an incentive
- Researchers visited the participating organisations on a regular basis to promote the project
- Posters were placed on notice boards around the organisations and flyers were distributed to employees at reception areas and canteens
- A website was set up which acted as a platform for the study and also provided information about the project ([www.wellbeinginwork.org](http://www.wellbeinginwork.org))

- To ensure that the survey was accessible to people with literacy problems or other difficulties completing the questionnaire, the organisations encouraged managers to support employees and participants were offered the option of completing the questions with a researcher in person.

## ***Recruitment procedure***

E-mail invitations were sent out in the first instance, with reminders sent out two and three weeks later. Employees who were contacted by e-mail accessed the survey via the Well-being in Work website ([www.wellbeinginwork.org](http://www.wellbeinginwork.org)). E-mails were also sent out to all staff within the organisations by senior managers in support of the project. Paper-and-pen questionnaires were distributed in several ways by the Well-being in Work research team and by Human Resources departments within the two organisations; through internal mail, by post to home addresses, hand delivered to off-site groups and handed out to managers for distribution. To further assist with participation and distribution, the research team contacted senior managers within the organisations to raise awareness and gain their support and gave a number of presentations to publicise the study. Finally, the research team visited the organisations in person to distribute questionnaire packs by hand at reception areas and canteens across a number of venues including: Aberdare Hospital, Mountain Ash Hospital, St Tydfil's Hospital, Prince Charles Hospital, Civic Centre, Ty Keir Hardie, and several of the Units on the Pentrebach Industrial Estate in Merthyr Tydfil. The recruitment process was supported by the Human Resources departments in both organisations, who arranged for the research team to have a presence on site and in distributing information and survey packs. This multi-pronged approach was designed to raise awareness of the project and ensure that the greatest possible number of people was reached across the organisations.

## ***How representative was the sample?***

In order to establish how representative the sample was, comparisons were made with existing information on the two organisations and the community in Merthyr Tydfil. Comparisons with the demographic data for the organisations as a whole indicated that in terms of age, gender and ethnic composition, there was no evidence of systematic sampling bias in participation in the study. With regards to assessing the general population in Merthyr Tydfil, comparisons were made with data from the Welsh Health Survey<sup>142</sup>. The WHS indicated that Merthyr had consistently higher rate of people reporting illness and health problems relative to the Welsh average. This was also reflected in the SF-36 scores where Merthyr had the lowest Physical Health score (46.8) for any area in Wales and the second lowest Mental Health score (47.3). Similarly, the sample of employees working in Merthyr Tydfil who responded to the WiW questionnaire reported high levels of illness and health problems. Overall, 27% reported that they had a serious or long term health

condition. The SF-12 scores were lower than the general population of Merthyr, with an average Physical Health score of 45.5 and, considerably lower, a Mental Health score of 39.4. These differences may be a reflection of sampling bias, which is common in social research. Eriksen et al.<sup>23</sup> stated similar concerns in assessing the prevalence of subjective health complaints using survey methodology, and provide a discussion of these issues; people who participate in health research may be more likely to have health problems or very healthy behaviour<sup>23</sup>. As the focus of the study is to investigate the impact of health problems on work, it is not a disadvantage that health problems were prevalent in this population in terms of addressing the research questions. Nonetheless, care should be taken in generalising the estimated impact of health on work in this sample to the organisation as a whole.

There were substantial differences between those completing the online and paper-and-pen versions of the questionnaire in terms of education, type of work, and socio-economic status. Those who responded using the online system were more likely to have a university degree, have high socio-economic status (SES) and work in modern professional occupations, while those who used the paper version were less likely to have a university degree and belonged to the lower supervisory, technical, semi-routine and routine occupations. The paper version of the questionnaire was used as a supplement to the online version and aimed to capture those employees who did not have email accounts or access to the internet, and therefore these differences were expected. In view of the response rates for the paper-and-pen survey, the analysis of the data could be strengthened by focusing on the online questionnaires only. However, the paper-and-pen questionnaires did allow us to gather data on a small sample of employees in routine or manual occupations and with lower SES; arguably the group in most need of support in terms of ill health. Therefore, on balance it was decided that it was better to include the paper-and-pen data than not to capture the views of people in the under-represented occupations/socio-economic groups at all. Despite the differences in job type and SES, for both paper-and-pen and online questionnaires most employees were on permanent contracts (87% & 88%) and worked extra hours (82% & 87%).

## ***Statistical Power***

In terms of the power of the sample for statistical analysis, the primary method of analysis to be used in this study is multivariate regression and our sample size was sufficient for the planned analysis. Tabachnick and Fidell<sup>143</sup> provide an overview of the procedures used to determine regression sample sizes. According to Green's rule of thumb<sup>144</sup>, the minimum sample required for this analysis would be  $n=202$  for multiple correlations, and 123 for individual predictors: our sample exceeds this estimate. Therefore, there is sufficient power to conduct valid analysis of this data set.

## **Recruitment challenges**

While several strategies were put in place to recruit as many employees as possible, the final response rate at baseline was lower than expected, particularly from participants who had been sent the paper-and-pen questionnaires (see Table 4). Obtaining a high response rate for surveys is notoriously challenging, particularly for longitudinal studies. In this particular case, there were a number of factors that may have contributed to the difficulties with recruitment, including: research fatigue in the population of interest, difficulties reaching employees that were not in office-based jobs, shift workers, and people working on sites where there were no meeting areas or canteen facilities/lunchroom, representations in the media and resulting negative attitudes towards research on health and work in this region, other pressures and priorities at work, varied levels of support from managers and some of the paper-and-pen questionnaires were distributed via a third party (i.e. line managers) where it was difficult to ensure that these had reached employees.

### **7.4.3. Employee survey measures**

A questionnaire was developed to explore the complex bio-psychosocial relationship between health and work in two large organisations across a 12-month period. The study included three data collection points: baseline (0 months), 6 months, and 12 months follow-up. The survey consisted of primarily existing validated measures, uniquely combined to specifically address the aims of this research. In the questionnaire administered at time point 1 (i.e. baseline) the distinction was made between measures of clinically-focused risk factors (i.e. Red, Orange and Yellow Flags) and occupational risk factors (Blue and Black Flags). The primary outcome measures in this study were sickness absence and work performance. The potential predictor variables included in the study were: demographics and education history, characteristics and descriptions of work, health and well-being, perceptions of work, and work-life balance. The validated questionnaires and additional items included in each of the risk factors and outcome measures are described below.

#### ***Clinical risk factors: 'Red', 'Orange', and 'Yellow' Flags***

The measures in the questionnaire that focused on clinical risk factors could be thought of as being concerned with Red, Orange and Yellow Flags. 'Yellow Flags' are those normal psychological and social/environmental factors that predict prolonged disability and failure to return to work<sup>56</sup>, and are covered in the 'demographics' section. While 'Yellow Flags' also include subjective perceptions of health and well-being that can contribute to disability and incapacity for work, serious physical or psychiatric pathology or disease may also be present, which are known as 'Red Flags'<sup>121 122</sup> and 'Orange Flags' respectively<sup>125</sup>. These clinical risk factors were included in the section on 'health and well-being'.



## **Demographics: 'About you'**

This section contained simple demographic questions. The questions captured data on: gender, age, ethnic group, level of education, marital status and who they live with. Where possible, the items in this section were consistent with the Welsh Health Survey <sup>145</sup>, so that the data could be compared with existing large scale survey data in the local population.

## **Health and well-being: 'About your general health and well-being'**

This section was concerned with general physical and mental health and well-being. This would allow us to look at how health impacts on work and how it relates to the other key areas measured in this study. The items originate from a number of established questionnaires:

- The SF12v2 Health Survey <sup>146</sup> was included to assess physical and psychological health
- The General Health Questionnaire (GHQ) <sup>147</sup> was used as a measure of psychological distress
- Health related quality of life was assessed using the EQ-5D <sup>148</sup>
- The use of health-care services was assessed using questions derived from the Health and Work Performance Questionnaire (HPQ) <sup>149</sup>.

The section also included an item on general happiness. The wording of this question was based on that provided in <sup>150</sup>, although the response categories were modified to provide a bi-polar scale with 'very happy' and 'very unhappy' at the extremes, and 'neither happy nor unhappy' as a neutral mid-point. One further question asked the individual if they had any serious or long term health conditions, and if yes, they were asked to give details.

## ***Organisational risk factors: 'Black' and 'Blue' Flags***

Measures of organisational risk factors included in the questionnaire were concerned with objective features of work (Black Flags), perceptions of work and work-life balance (Blue Flags). 'Black Flags' are concerned with organisational obstacles to recovery, comprising objective work characteristics and conditions of employment <sup>123</sup>. These are covered in the 'characteristics and descriptions of work' section. 'Blue Flags' are those perceived features of work relating to the job characteristics such as job demand, as well as the perception of social interactions with work colleagues, and are covered in the 'perceptions of work' section.

## **Setting the organisational context (Black Flags)**

In order to set the organisational context for the study, participating organisations provided existing data on the demographic and occupational characteristics of their workforce along with sickness absence data (anonymised and aggregated for ethical reasons). They also

provided information on relevant policies, procedure, and services that were already in place. This allowed for assessment of how representative the sample was of the parent population as well as allowing for the identification of potentially modifiable 'Black Flags' within the organisation.

### **Characteristics and descriptions of work: 'About your work'**

The questions in this section were concerned with the measurement of work characteristics and descriptions of work. The aims of this section were to assess socio-economic status, and to gain an objective description of each individual's job to enable comparisons of job type both within and between organisations.

To assess socio-economic status, the Office of National Statistics (ONS) National Statistics Socioeconomic Classification (NS-SEC <sup>151</sup>), self-report method items on employment status, supervisory role, and occupation required to derive socio-economic status were included.

To gather an objective description of work, two key areas were measured in this section:

- characteristics of work to evaluate actual employment, i.e. job type and contract type
- working practice looked at descriptions of work based on the job undertaken, its hours, shift patterns, and physical demands.

The questions included in this section have been used in a number of large studies <sup>20 152</sup>. Therefore, there is great comparability with a number of other published studies.

### **Perceptions of work: 'What do you think about your work?'**

This section focused on individuals' perceptions of work in terms of both their job and their workplace which may be associated with sub-optimal performance. The aim of measuring these factors was to gain a subjective perspective of an individual's job and workplace.

The first item in this section related to general stress at work. The question was derived from the Bristol Stress and Health at Work Study <sup>152</sup>, and asked 'In general, how do you find your job?' with responses being scored on a 5 point Likert scale (from not at all stressful to extremely stressful).

The remaining questions in this section were derived from the EEF/I-WHO Work Organisation Assessment Questionnaire (WOAQ) <sup>153</sup>. The WOAQ measures five key areas: (1) quality of relationships with management; (2) reward and recognition; (3) workload; (4) quality of relationships with colleagues; and (5) quality of physical environment. A clear

advantage of this tool is that it was developed in the UK and reliability and validity tests that have been conducted.

Finally, a six-item scale was included to investigate individuals' work-life balance. They originated from an 18-item work-life balance questionnaire, being developed by Main et al. (unpublished study, Keele University). The six-item version of the questionnaire was developed in a UK population and has been tested for reliability and validity: the test re-test reliability of all the items has been established and is satisfactory.

## ***Outcome measures***

Sickness absence and presenteeism were the key outcome measures in this study. These were assessed by self-report of sickness absence and spells of sickness due to health reasons over a 12-month period, impact of seven specific common health problems on absence and performance, general performance at work, and presenteeism. Details of each are provided below.

### **Sickness absence: 'Your health and work'**

Sickness absence is a commonly used outcome measure in studies of work and employment. The first two questions in this section related to sickness absence over the past 12 months. Participants were asked to report how many days they have been absent, and how many spells of absence of more than a week they have had over the past 12 months. The questions originate from a study that assessed the validity of the HSE Management Standards Stress Tool<sup>20</sup>, and similar items were included in the Whitehall II study<sup>154</sup>, although the wording varied slightly. Therefore, inclusion of these items allowed comparison of the current study with previous work.

Sickness absence due to more specific health problems over the past 30 days was also assessed via a checklist of common symptoms, including cold and flu symptoms, mood, fatigue, sleep and pain. Participants were asked whether they have had any of these symptoms over the past 30 days, and whether they needed to take time off work because of them. If they did need to take time off, they were asked how many days.

### **Health and performance at work: 'Your health and work'**

This section aimed to improve understanding of how health impacts on an individual's performance in the workplace. Individuals were asked to rate their general performance at work over the past 30 days on an 11-point scale from 0 (worst performance) to 100 (best performance). They were then asked how often they have to 'cut back' on their performance for health reasons (either physical or emotional) over the past 30 days. The impact of common symptoms on performance at work, including cold and flu symptoms,

mood, fatigue, sleep and pain, was assessed, with the aim of gaining an understanding of the contribution of each of these symptoms to the impact of health on performance in the workplace. These questions were based on the Main et al.<sup>20</sup> study, which assessed the validity of the HSE Management Standards Stress Tool, and would allow comparison with this study.

The 6-item Stanford Presenteeism Scale (SPS6)<sup>155</sup> was included in this section to provide additional information on how health impacts on performance at work. The SPS was designed to measure 'presenteeism'. Definitions of presenteeism in the literature vary; however, the measure used in this study was a short form of the Stanford Presenteeism Scale (SPS6) which taps in to the extent to which people feel their health problem(s) impact on their work. Presenteeism may be a precursor to future long-term sickness absence, and therefore this variable may be a central component of the assessment tool, which could identify people who may benefit from work retention interventions. This questionnaire has undergone preliminary testing for reliability and validity, mainly in the United States. The inclusion of the scale in this study would allow for further validation, and provide novel data on presenteeism in a UK population.

### ***Measures in the follow-up questionnaires***

Follow-up questionnaires were administered 6 and 12 months after the baseline questionnaire. To reduce the burden on the participants, the two follow-up questionnaires contained some, but not all, of the items from time point 1 (i.e. baseline). Items included in the follow-up questionnaires are shown in Table 6. At all three time points, individuals were given the opportunity at the end of the questionnaire to add any comments or feedback and to enter the free prize draw.

#### **7.4.4. Ethical issues and confidentiality**

When invited to take part in the study, employees were informed that participation would be completely voluntary, and that anything they did tell us would be completely confidential. Their employer would not have any access to their data and it would not be possible to identify them from any reports or published work from the study. When the questionnaires were received by the WiW team, personal details (such as email addresses and date of birth) were replaced with an identification number. One member of the research team had access to a 'key' with the personal details and corresponding identification numbers so that the questionnaires from the three time points could be linked together. The key was destroyed at the end of the data collection phase so that the information held became anonymous. This research was reviewed and deemed acceptable to pursue by the Multi-centre Research Ethics Committee for Wales (meeting held on 11.01.07).

**Table 6. Summary of baseline and follow-up measures**

Measures	Time Point		
	Baseline	6 mth	12 mth
<b><u>Clinical risk factors: 'Red', 'Orange', and 'Yellow' Flags</u></b>			
<b>1. Demographics</b>			
• 6 items (gender, age, ethnic group, education, marital status, living with)	✓	x	x
• Do you live in Merthyr Tydfil? How many miles away?	x	✓	✓
• Have there been any major changes in your life?	x	✓	✓
<b>2. Health and well-being</b>			
• Do you have any serious or long term health conditions? If yes, give details.	✓	x	✓
• SF12v2 (12 items)	✓	x	✓
• GHQ12 (12 items)	✓	x	✓
• EQ-5D (6 items)	✓	✓	✓
• Use of healthcare services (7 items)	✓	x	✓
• General happiness (1 item)	✓	x	✓
<b><u>Organisational risk factors: 'Black' and 'Blue' Flags</u></b>			
<b>3. Characteristics &amp; descriptions of work</b>			
• 16 items (e.g. type of contract, extra hours)	✓	x	✓
• What is your job title?	✓	x	x
• Have there been any major changes in your job?	x	✓	x
<b>4. Perceptions of work</b>			
• WOAQ (28 items)	✓	✓	✓
<b>5. Work-life balance</b>			
• 6 items	✓	x	✓
<b><u>Outcome measures</u></b>			
<b>6. Sickness Absence</b>			
• 2 items (days off & spells of sickness)	✓	✓	✓
• 7 items (due to specified common health problems)	✓	✓	✓
<b>7. Health and performance at work</b>			
• 2 items (general performance & cutting back)	✓	✓	✓
• 7 items (due to specified common health problems)	✓	✓	✓
• SPS6 (6 items)	✓	✓	✓

### 7.4.5. Design and Analysis

Data was collected at three time points: baseline (0 months), 6 months, and 12 months follow-up. The baseline data was analysed cross-sectionally initially to identify relationships between health and work and the role of moderating factors – that is to say, those which could potentially be targeted for interventions at an individual or organisational level. Then the data across the three time points was analysed longitudinally to investigate whether modifiable risk factors for high impact of health on work over the 12-month period could be identified. Both cross-sectional and longitudinal statistical analysis focused primarily on four outcome variables relating to absence and performance, shown in Table 7.

Table 7. Primary outcome variables

Outcome variable	Associated survey item
<b>SICKNESS ABSENCE</b>	In the last 12 months how many days were you off work for health reasons?
<b>SPELLS OF SICKNESS</b>	In the last 12 months how many spells of sickness lasting a week have you experienced?
<b>WORK PERFORMANCE</b>	Generally, over the past 30 days, how would you rate your performance at work?
<b>PRESENTEEISM</b>	SPS6 scale (6 items)

### *Cross-sectional analysis*

The cross-sectional data analysis of the baseline data set was carried out using Statistical Package for the Social Sciences (SPSS). The following analysis was conducted:

1. Descriptive analysis of baseline data on the prevalence of common health problems and their impact on sickness absence and performance at work.
2. Univariate and bivariate analysis. T-tests and Analysis of Variance (ANOVA) were carried out as appropriate to identify differences between groups for categorical variables (e.g. gender). For continuous variables (i.e. ratings on a continuous scale), correlational analysis was used to explore the strength and direction of the associations between the health, well-being and work variables<sup>b</sup>.
3. Hierarchical multivariate regression analysis (Stepwise method) of baseline data to identify the statistically independent effects of health, objective work

<sup>b</sup> If two variables are associated with each other (i.e. correlated), then knowing the score on one variable will allow us to predict the score on the other variable. Positive correlations indicate that an increase in one variable will be associated with a decrease in the other, while negative correlations indicate that an increase in one variable is associated with a decrease in the other. NB: Causality cannot be inferred using a correlational design.

characteristics and perceptions of work on (a) sickness absence and (b) performance at work<sup>c</sup>.

## ***Longitudinal Analysis***

The longitudinal data was analysed using MLM. MLM is an extension of the multivariate regression analysis but corrects for the clustering of data from the three time points within individuals, rather than treating these as being independent. MLM enables us to look at differences between individuals across the three time points, as well as looking at changes within individuals at each time point (or 'wave'). A single model is produced for each outcome variable including both the between-person (measured at baseline) and within-person (measured at each time-point) variables.

The four main outcome variables were days off work, spells of sickness, self-reported performance at work and presenteeism as they varied over time. The predictor variables were entered in to the models to assess the independent effects of:

1. Within-person (Level 1) variables: health and perceptions of work at each time point
2. Between-person (Level 2) variables: demographics, general health and objective characteristics of work at baseline.

The purpose of this was to investigate the relative statistical effects of changes in Yellow Flags (subjective health) and Blue Flags (perceptions of work) over time, independently of baseline general health and objective characteristics of work.

## **7.5. RESULTS**

In this section, the organisational context for this study is set, followed by the findings of the cross-sectional analysis of the baseline data and finally the longitudinal analysis of the survey data. The results are organised around the four primary research questions outlined in the introduction to this study:

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<sup>c</sup> Regression analysis involves building a model to assess the independent effects of a set of 'predictor' variables on the outcome variable(s). In correlational analysis, the stronger the correlation, the closer the scores will fall to the regression line, therefore, the more accurate the prediction. Multiple regression is simply an extension of this principle, where we predict one variable on the basis of several other variables. The advantage of the method is that where variables of interest are inter-related the regression models can provide information on the independent effects of each variable. So for example, if we are interested in predicting sickness absence, variables relating to demographics, objective work characteristics, health and well-being, and perceptions of work might all contribute towards absence. Regression will allow us to identify which of these variables would allow the most accurate prediction of sickness absence. There are several different methods of carrying out multivariate regression analysis, each of which has advantages and disadvantages. The Stepwise method used in this study uses a 'statistical' method to establish the order in which variables will be included based on the strength of their association with the outcome variables. The variables with the strongest association are entered first and the independent effect of each of the remaining variables on the variance that has not been explained is then assessed.

1. What is the impact of health on work in terms of performance as well as absence?
2. Are objective and perceived characteristics of work associated with health and well-being?
3. Do the objective characteristics of work & perceptions of work moderate the impact of health on work?
4. How does this change over time?

### **7.5.1. The Organisational Context**

The organisational context was of particular interest in the WiW Stage 2 research in considering the role of 'Black Flags' – organisational factors – in influencing how health impacted on work. Prior to carrying out the employee survey, information was gathered from the participating organisations to allow us to build a profile of the impact of health problems and the policies and procedures already in place to manage absence and/or presenteeism.

#### ***Organisational characteristics and employee demographics***

Two major employers in Merthyr Tydfil participated in the WiW study: the NG NHS Trust and the MTCBC. These two public sector organisations incorporate a wide range of jobs including routine and semi-routine manual and service occupations, clerical and intermediate occupations, modern professional occupations, senior managers or administrators, technical and craft occupations, middle or junior managers, and traditional professional occupations. Table 8 summarises the number of employees working at the two organisations.

The two organisations show similar employee demographic characteristics (see Table 9) in terms of age and ethnic origin, although there does appear to be more women working in the NG NHS Trust (77%) than the MTCBC (68%).

#### ***Existing organisational policies and sickness absence***

Both organisations currently hold Silver Awards under the Corporate Health Standard (CHS) initiative, and therefore, have a number of policies and procedures in place aimed at improving the well-being of their employees. Table 10 summarises the current organisational policies, procedures and services in place at both organisations. Within the NG NHS Trust an overall 5.39% of working days are lost due to sickness absence, and within the MTCBC 4.14% are lost. The resulting economic cost of sickness absence can be considerable, with an estimated cost of £4.8 million within the NG NHS Trust, and £1.4 million at the MTCBC based on salary costs alone. However, levels of presenteeism are unknown, making it difficult to know the full economic costs of health problems within the organisations.



**Table 8. Number of staff employed within the two organisations**

MTCBC	Headcount
• Customer Community Services	602
• Customer Corporate Services	159
• Corporate Centre	192
• Finance, Audit and Risk Management	53
• Integrated Adult's Service	566
• Integrated Children's Service	1704
TOTAL HEADCOUNT	3276

NG NHS Trust	Headcount
• Add Prof Scientific and Technical	98
• Additional Clinical Services	115
• Administrative and Clerical	602
• Allied Health Professionals	153
• Estates and Ancillary	545
• Healthcare Scientists	51
• Medical and Dental	345
• Nursing and Midwifery Registered	1051
• Students	470
TOTAL HEADCOUNT	3431

**Table 9. Employee demographics (staff in post in May, 2007)**

	MTCBC <sup>a</sup>	NG NHS Trust
Staff: Headcount	3276	3431
Staff: Full-time Equivalent	2547.15	2912.68
Female	2538 (68%)	2649 (77%)
Male	1186 (32%)	782 (23%)
Age		
• 16-35 years	1211 (33%)	923 (27%)
• 36-55 years	1939 (52%)	2032 (59%)
• 56-71 years & above	574 (15%)	476 (14%)
Ethnic origin		
• White	2366 (99%)	1631 (90%)
• Other	12 (1%)	189 (10%)

<sup>a</sup> Demographics includes data from Integrated Children's Services (ICS: i.e. Education); however, this group of employees were not included in the Stage 2 project. ICS headcount = 1704/ Full-time equivalent = 1169.77)

**Table 10. Summary of organisational policies, procedures and services**

Policy	MTCBC	NG NHS Trust
OH service available	✓	✓
Sickness absence policy	✓	✓
Health and Safety	✓	✓
Risk management	✓	✓
Equality and diversity policy	✓	✓
Redeployment	✓	✓
Flexible working	✓	✓
Job share	✓	✓
Sick leave interviews	✓	✓
Training for managers in absence management?	✓	✓
Health promotion (e.g. exercise classes, blood pressure checks, information/events...)	✓	✓

Working with specific employers provides an opportunity to look at Black as well as Blue Flags. These employers have a number of policies and services available to staff and their CHS awards indicate that they take a pro-active approach to managing absence and promoting health/well-being. However, effective implementation of policies can be a major problem for organisations. These challenges and opportunities in reducing the impact of health on work at an organisational level will be explored during WiW Stage 2 and we return to this issue later in the report.

### **7.5.2. What is the impact of health on work in terms of performance and sickness absence?**

In the first stage of analysis, the prevalence of health problems, and their impact on work in terms of sickness absence and performance was examined. Twenty seven percent of employees at work reported having a serious or long term health condition. In terms of sickness absence over a 12-month period, 63% of employees took time off work with an overall average of 6.37 days sickness absence (SD: 13.45, Range: 119) over the year, while 37% took no time off work. Compared to the sickness absence rates from the organisations as a whole, the time taken off work by employees in our sample was relatively low. In our sample, sickness absence rates were estimated by calculating the percentage of working days lost based on approximately 250 working days per year. 2.82% of working days were lost at the NG NHS Trust (compared to 5.39% for the organisation as a whole) and 2.33% were lost at the MTCBC (compared to 4.14%). This may be due to sampling and/or measurement issues; however, the data provided by the organisations indicated that absence rates vary considerably between departments (0.67% - 8.86% at the NG NHS Trust,

and 1.86% - 6.88% within the MTCBC). Nonetheless, the sickness absence rates reported in this study are likely to be an under-estimation of sickness absence for the organisations as a whole.

Employees were also asked about sickness absence due to seven different common health problems over a 30 day period. Both physical and mental health complaints had a high prevalence in the workplace, with 86% of employees having one or more of the seven common health problems included in the survey over the last 30 days (see Table 11).

**Table 11. Health problems in order of prevalence**

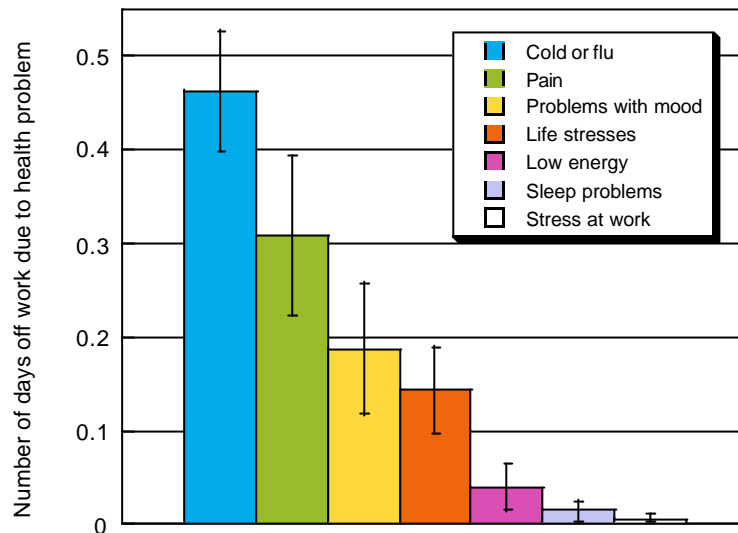
Health problem	Prevalence (%)
Low energy	51.6
Cold or flu symptoms	50.5
Life stresses (outside of work)	46.3
Problems with mood	45.1
Pain	44.6
Sleep problems	43.8
Stress at work	43.5

These common health problems varied in their effects on absence and performance. For example, on average, employees took almost half a day a month off work because of cold and flu symptoms, but far less because of stress at work (see Figure 6). People were more likely to take time off work for the more physical problems, such as cold and flu symptoms or pain, than for mental health problems such as stress (both in and out of work), low energy and sleep problems ( $F=11.45$ ,  $p<0.001$ ). Paired-sample t-tests showed that the number of days off work because of cold & flu symptoms was significantly more than all the mental health problems ( $p<.01$  for all 5 comparisons), but no more than because of pain ( $p>.05$ ). The number of days off work because of pain was higher than for low energy ( $p<.01$ ), sleep problems ( $p=.001$ ), and stress at work ( $p<.001$ ), but was not different to problems with mood or life stresses ( $p>.05$ ).

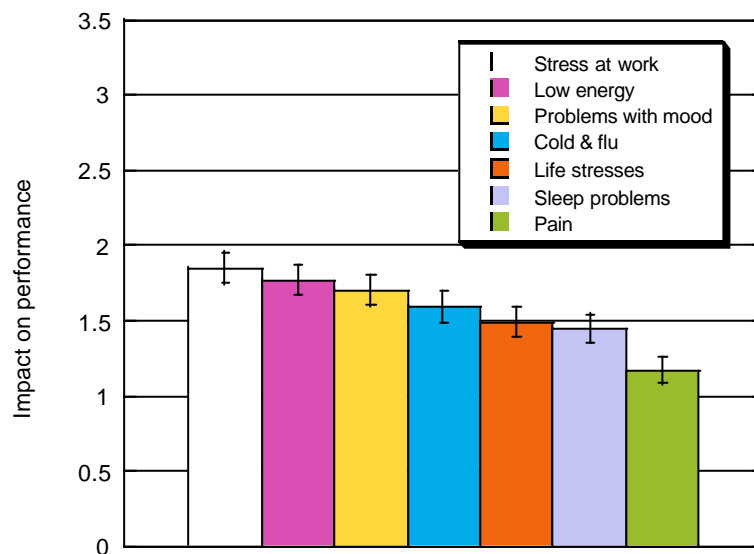
However, this pattern is reversed when the impact of these seven health problems on self-rated performance at work is examined. Employees were asked to what extent these problems affected their work performance over the last 30 days. Results indicated that the common mental health problems had a greater impact on work performance than the more physical complaints ( $F=10.86$ ,  $p<0.001$ , see Figure 7). T-tests showed that the impact of pain on work performance was less than all the other health problems ( $p<.05$  for all 6 comparisons). Furthermore, cold and flu symptoms had significantly less impact than stress at work ( $p<.05$ ). Interestingly, problems with mood had a greater impact than sleep

problems and life stresses, and less impact than stress at work ( $p < .05$  for all 3 comparisons).

**Figure 6. Sickness absence due to each health problem**



**Figure 7. Impact on performance due to each health problem**



Cumulatively, the impact of these health problems on sickness absence and work performance can amount to be high in large organisations or in the population as a whole. Common physical and mental health complaints have a high prevalence in the workplace, but they have different effects in terms of sickness absence and work performance. Much of the current literature about the impact of health on the workforce is concerned with the impact health has on sickness absence, and there is very little that examines the impact of health on performance and loss of productivity. These results demonstrate the importance

of looking at the impact of physical and mental health problems on both sickness absence and performance at work.

### 7.5.3. Are objective and perceived characteristics of work associated with health and well-being?

Bivariate analyses were carried out to explore the strength of relationships between objective and perceived characteristics of work and health and well-being. Six health measures and 21 measures of work characteristics were subjected to bivariate Pearson's correlations, independent t-tests, and one-way ANOVA's as appropriate. Significant effects are shown in Tables 12 to 15.

**Table 12. Variables that correlated significantly with the EQ5D Health State and EQ5D Thermometer**

Variables that correlated with EQ5D Health State				
	<i>r</i>	<i>n</i>	<i>p</i>	
Boring, monotonous or repetitive work	-0.174	567	0.000	**
How stressful do you find your job?	-0.253	566	0.000	**
WOAQ: Relationships with management	0.296	567	0.000	**
WOAQ: Reward & recognition	0.277	567	0.000	**
WOAQ: Workload issues	0.271	567	0.000	**
WOAQ: Relationships with colleagues	0.159	567	0.000	**
WOAQ: Quality of physical environment	0.281	567	0.000	**
Lifting or carrying heavy weights	-0.085	567	0.043	*
	<i>t</i>	<i>df</i>	<i>p</i>	
Type of contract (Permanent or Other)	-3.519	139.212	0.001	**
Ability to work at home	2.246	558	0.025	*
Variables that correlated with EQ5D Thermometer				
	<i>r</i>	<i>n</i>	<i>p</i>	
How stressful do you find your job?	-0.244	570	0.000	**
WOAQ: Relationships with management	0.296	571	0.000	**
WOAQ: Reward & recognition	0.279	571	0.000	**
WOAQ: Workload issues	0.325	571	0.000	**
WOAQ: Relationships with colleagues	0.206	571	0.000	**
WOAQ: Quality of physical environment	0.312	571	0.000	**
Boring, monotonous or repetitive work	-0.123	571	0.003	**
Allocated breaks	0.117	567	0.005	**
Repetitive movements	-0.095	570	0.024	*

\*\*correlations significant at  $p < 0.01$  level (2-tailed), \* $p < 0.05$  level (2-tailed)

\*\*Mean difference significant at  $p < 0.01$  level (2-tailed), \* $p < 0.05$  level (2-tailed)

The EQ5D <sup>148</sup> assesses health related quality of life (QoL) and provides both a compact descriptive profile (Health State) and a single index value (Thermometer) that can be used in the clinical and economic evaluation of health care. Results (see Table 12) show that the EQ5D has a strong relationship with several of the objective and perceived characteristics of work. Using the EQ5D, people who found their jobs boring or stressful reported lower QoL, as did those whose jobs involved manual work (lifting or repetitive movements). QoL was higher for those with permanent contracts, could work from home and were able to take their allocated breaks. A more positive perceived work environment (WOAQ subscales) was associated with better QoL.

**Table 13. Variables that correlated significantly with the SF12v2 Physical and Mental Scores**

Variables that correlated with SF12v2 Physical Score				
	<i>r</i>	<i>n</i>	<i>p</i>	
Number of contracted hours	-0.119	568	0.005	**
Allocated breaks	0.094	568	0.025	*
WOAQ: Quality of physical environment	-0.090	572	0.031	*
	<i>t</i>	<i>df</i>	<i>p</i>	
Supervision of other employees	-2.144	559	0.032	*
	<i>F</i>	<i>df</i>	<i>p</i>	
NS-SEC	1.419	369, 176	0.004	**
Variables that correlated with SF12v2 Mental Score				
	<i>r</i>	<i>n</i>	<i>p</i>	
Boring, monotonous or repetitive work	0.229	572	0.000	**
How stressful do you find your job?	0.339	571	0.000	**
WOAQ: Relationships with management	-0.355	572	0.000	**
WOAQ: Reward & recognition	-0.315	572	0.000	**
WOAQ: Workload issues	-0.365	572	0.000	**
WOAQ: Relationships with colleagues	-0.185	572	0.000	**
WOAQ: Quality of physical environment	-0.275	572	0.000	**
Number of contracted hours	0.113	568	0.007	**
	<i>F</i>	<i>df</i>	<i>p</i>	
NS-SEC	1.325	364, 181	0.016	*

\*\*correlations significant at  $p < 0.01$  level (2-tailed), \* $p < 0.05$  level (2-tailed)

\*\*Mean difference significant at  $p < 0.01$  level (2-tailed), \* $p < 0.05$  level (2-tailed)

The SF12v2 <sup>146</sup> provides an assessment of both physical and psychological health, while the GHQ <sup>147</sup> is a measure of general health which taps in to psychological distress. Results

showed that both were strongly associated with several of the objective and perceived characteristics of work (see Tables 13 & 14).

**Table 14. Variables that correlated significantly with the GHQ**

Variables that correlated with GHQ				
	<i>r</i>	<i>n</i>	<i>p</i>	
Boring, monotonous or repetitive work	0.188	524	0.000	**
How stressful do you find your job?	0.364	523	0.000	**
WOAQ: Relationships with management	-0.408	524	0.000	**
WOAQ: Reward & recognition	-0.375	524	0.000	**
WOAQ: Workload issues	-0.461	524	0.000	**
WOAQ: Relationships with colleagues	-0.235	524	0.000	**
WOAQ: Quality of physical environment	-0.328	524	0.000	**
Repetitive movements	0.095	523	0.029	*
Allocated breaks	-0.094	520	0.032	*
Lifting or carrying heavy weights	0.089	524	0.042	*
	<i>F</i>	<i>df</i>	<i>p</i>	
NS-SEC	2.218	32, 469	0.000	**

\*\*correlations significant at  $p < 0.01$  level (2-tailed), \* $p < 0.05$  level (2-tailed)

\*\*Mean difference significant at  $p < 0.01$  level (2-tailed), \* $p < 0.05$  level (2-tailed)

Both the GHQ and SF12v2 mental health scores indicated that more positive perceptions of work were associated with better mental health, whereas having boring or stressful jobs were associated with poorer mental health. However, these variables were not associated with the SF12v2 physical scores (with the exception of the WOAQ physical work environment score), suggesting they were more closely related to mental well-being than physical health. Conversely, the SF12v2 physical scores were more closely associated with objective characteristics of work, including the NS-SEC occupational classification and supervisory role (suggesting physical health was poorer for those in lower SES groups).

Having a job that was boring or involved repetitive movements was associated with having a serious/long-term health condition (see Table 15), whereas having flexible working hours and more positive perceptions of work was associated with the absence of a serious/long-term condition. Five objective characteristics subjected to the analysis did not correlate with any of the health measures: frequency of working extra hours, number of extra hours, standing in one position, and sitting in one position for a long period of time.

**Table 15. Variables that correlated significantly with serious or long term health conditions**

Variables that correlated with serious or long term health conditions				
	<i>r</i>	<i>n</i>	<i>p</i>	
WOAQ: Workload issues	0.123	573	0.003	**
WOAQ: Relationships with management	0.128	573	0.002	**
WOAQ: Quality of physical environment	0.108	573	0.010	**
WOAQ: Reward & recognition	0.101	573	0.016	*
Repetitive movements	-0.099	572	0.018	*
Boring, monotonous or repetitive work	-0.084	573	0.044	*
	<i>t</i>	<i>df</i>	<i>p</i>	
Flexible working hours	2.627	339.259	0.009	**

\*\*correlations significant at  $p < 0.01$  level (2-tailed), \* $p < 0.05$  level (2-tailed)

\*\*Mean difference significant at  $p < 0.01$  level (2-tailed), \* $p < 0.05$  level (2-tailed)

#### 7.5.4. Do the objective characteristics of work & perceptions of work moderate the impact of health on work?

The third stage of analysis involved: (1) bivariate analysis to establish the strength of the relationships between health, well-being and work; and (2) hierarchical multivariate regression analysis to identify the independent effects of health, objective work characteristics and perceptions of work on sickness absence and performance at work.

##### ***Bivariate analysis***

Initially, bivariate analysis was carried out to explore the relationships between the predictor variables (demographics, health and well-being, objective characteristics of work, perceptions of work) and the four primary outcome variables (sickness absence - number of days off work and number of spells of absence; performance - self-rated performance and presenteeism). Bivariate Pearson's correlations, independent t-tests, and one-way ANOVA's were used as appropriate. Significant effects are shown in Tables 16 (absence) and 17 (performance).

Mental health and well-being was associated with both the number of days absence and spells of sickness, while having a serious/long-term illness was associated with a higher number of days absence but not spells of sickness. Perceptions of work, particularly relationships with managers and reward and recognition were associated with lower levels of absence, while work that was boring or stressful was associated with increased absence. The frequency of additional hours was associated with fewer days absence but this may have reflected the extra hours typically associated with higher level jobs (e.g. managerial



positions), particularly as jobs that involved manual tasks (standing and lifting) were associated with longer spells of sickness. Ability to work from home was also associated with fewer days absence.

**Table 16. Variables that correlated significantly with sickness absence and spells of sickness over the last 12 months**

<b>Variables that correlated with SICKNESS ABSENCE</b>				
	<i>R</i>	<i>n</i>	<i>p</i>	
Boring, monotonous or repetitive work	0.160	554	0.000	**
WOAQ: Relationships with management	-0.113	554	0.008	**
Frequency of working extra hours	-0.111	551	0.009	**
WOAQ: Reward & recognition	-0.109	554	0.010	**
GHQ	0.100	507	0.025	*
	<i>T</i>	<i>df</i>	<i>p</i>	
Ability to work at home	-2.415	306.338	0.016	*
Serious or long term health condition	2.279	234.775	0.024	*
<b>Variables that correlated with SPELLS OF SICKNESS</b>				
	<i>R</i>	<i>n</i>	<i>p</i>	
How stressful you find your job	0.156	553	0.000	**
SF12 Mental	0.173	553	0.000	**
GHQ	0.185	507	0.000	**
WOAQ: Relationships with management	-0.166	554	0.000	**
WOAQ: Reward & recognition	-0.151	554	0.000	**
WOAQ: Workload issues	-0.143	554	0.001	**
WOAQ: Relationships with colleagues	-0.137	554	0.001	**
WOAQ: Quality of physical environment	-0.126	554	0.003	**
Standing in one position	0.098	554	0.021	*
Lifting/carrying heavy weights	0.086	554	0.043	*

\*\*correlations significant at  $p < 0.01$  level (2-tailed), \* $P < 0.05$  level (2-tailed)

\*Mean difference significant at  $p < .05$  level (2-tailed)

Mental health and well-being were associated with work performance and presenteeism, but the physical health measures were not (SF12v2 Physical, serious/long-term illness). Work characteristics, such as repetitive work, were associated with sickness absence, spells of sickness and work performance, while perceptions of work were associated with all four outcome variables. Finally, an employee's age correlated with work performance and presenteeism (but not absence) with older participants reporting less impact of health on work.

**Table 17. Variables that correlated significantly with self-rated performance and presenteeism**

<b>Variables that correlated with WORK PERFORMANCE</b>				
	<i>r</i>	<i>n</i>	<i>p</i>	
How stressful you find your job	-0.264	557	0.000	**
SF12 Mental	-0.364	557	0.000	**
GHQ	-0.513	512	0.000	**
WOAQ: Relationships with management	0.314	558	0.000	**
WOAQ: Reward & recognition	0.263	558	0.000	**
WOAQ: Workload issues	0.359	558	0.000	**
WOAQ: Relationships with colleagues	0.246	558	0.000	**
WOAQ: Quality of physical environment	0.250	558	0.000	**
Age	0.123	538	0.004	**
Boring, monotonous or repetitive work	-0.089	558	0.035	*
Number of contracted hours	-0.085	554	0.046	*
<b>Variables that correlated with PRESENTEEISM</b>				
	<i>r</i>	<i>n</i>	<i>p</i>	
GHQ	0.385	330	0.000	**
WOAQ: Relationships with management	-0.220	366	0.000	**
WOAQ: Reward & recognition	-0.202	366	0.000	**
WOAQ: Workload issues	-0.239	366	0.000	**
WOAQ: Relationships with colleagues	-0.196	366	0.000	**
WOAQ: Quality of physical environment	-0.221	366	0.000	**
Age	-0.179	350	0.001	**
SF12 Mental	0.161	365	0.002	**

\*\*correlations significant at  $p < 0.01$  level (2-tailed), \* $P < 0.05$  level (2-tailed)

\*Mean difference significant at  $p < 0.05$  level (2-tailed)

## ***Multivariate regression analysis***

During the third stage of analysis, hierarchical multivariate regression analysis was carried out to establish the impact of health and work on sickness absence and work performance at one particular time point (baseline). Multivariate regression is a technique that allows us to predict someone's score on one variable on the basis of their scores on several other variables.

To identify statistical predictors of absence and performance, four stepwise regressions were carried out; two for sickness absence and two for work performance. In each of the

four models, 18 health and work variables (see Table 18) were included. Variables were selected to enter the regressions if they correlated significantly with at least one of the four outcome variables (see Table 7). The type of contract (permanent or other) did not correlate with any of the outcome variables; however, it was felt to be theoretically important to include this variable in the regression analysis.

**Table 18. Predictor variables entered into regression models**

Predictor variable	Associated survey item
<b>DEMOGRAPHICS</b>	Age
<b>WORK CHARACTERISTICS</b>	Type of contract (Permanent or Other)
	Number of contracted hours
	Frequency of working extra hours
	Standing in one position
	Lifting or carrying heavy weights
	Boring, monotonous or repetitive work
	Ability to work at home
<b>HEALTH &amp; WELL-BEING</b>	Serious or long term health condition
	SF12 Physical Score
	SF12 Mental Score
	GHQ
<b>PERCEPTIONS OF WORK</b>	How stressful do you find your job?
	WOAQ. Relationships with management
	WOAQ. Reward & recognition
	WOAQ. Workload issues
	WOAQ. Relationships with colleagues
	WOAQ. Quality of physical environment

Two regression models examined the association between health and sickness absence, and whether the objective or perceived characteristics of work affected this relationship. The analysis revealed a number of variables that had a small, but statistically significant, effect on absence (see Table 19 for results).

In terms of sickness absence, very little of the variance was accounted for: 3% of absence was explained by work characteristics and health issues (Adjusted R square = 0.030;  $F_{2,504} = 8.722$ ,  $p < 0.001$ ). A job that was perceived as boring, repetitive or monotonous had the strongest impact on sickness absence. Serious or long-term health conditions also had an effect; however, this relationship (less than 1%) was not as strong as might have been expected. Again, only a small proportion (4%) of sickness spells (a week or more) was

explained by health and work characteristics (Adjusted R square = 0.040;  $F_{2,504} = 11.616$ ,  $p < 0.001$ ). Psychological distress (as assessed by the GHQ) had the most effect, followed by the quality of relationships with managers.

**Table 19. Significant predictors of sickness absence**

Significant predictors of SICKNESS ABSENCE				
	Beta	<i>t</i>		R <sup>2</sup> Change (%)
<b>WORK CHARACTERISTICS</b>				
Boring, monotonous or repetitive work	0.152	3.460	**	2.5
<b>HEALTH &amp; WELL-BEING</b>				
Serious or long term health condition	-0.090	-2.039	*	0.8
Significant predictors of SPELLS OF SICKNESS				
	Beta	<i>t</i>		R <sup>2</sup> Change (%)
<b>HEALTH &amp; WELL-BEING</b>				
GHQ	0.141	2.956	**	3.4
<b>PERCEPTIONS OF WORK</b>				
WOAQ: Relationships with management	-0.108	-2.269	*	1.0

\*\*  $p < 0.01$ , \*  $p < 0.05$

A further two regression models examined the impact of health and work on performance at work. A number of variables were identified as significant predictors of work performance and presenteeism (see Table 20 for results). Higher performance scores indicated better performance, while higher presenteeism scores indicated a greater impact of health with work.

Thirty percent of performance at work was explained (Adjusted R square = 0.306;  $F_{5,501} = 45.532$ ,  $p < 0.001$ ) by a combination of health, perceptions of work, demographics and objective work characteristics. General psychological distress (as assessed by the GHQ) was the strongest predictor of self-rated work performance, accounting for over 26% of the variance, with relatively little explained by the remaining variables. In terms of presenteeism, 18% was explained (Adjusted R square = 0.180;  $F_{3,326} = 25.012$ ,  $p < 0.001$ ) by psychological health, demographics and perceptions of work. Again, psychological distress had the greatest impact, while age and relationships with colleagues had a small, but statistically significant, effect.

**Table 20. Significant predictors of work performance**

Significant predictors of WORK PERFORMANCE				
	Beta	<i>t</i>		R <sup>2</sup> Change (%)
<b>HEALTH &amp; WELL-BEING</b>				
GHQ	-0.417	-9.874	**	26.3
<b>PERCEPTIONS OF WORK</b>				
WOAQ: Workload	0.153	3.568	**	1.9
<b>DEMOGRAPHICS</b>				
Age	0.116	3.122	**	1.3
<b>PERCEPTIONS OF WORK</b>				
WOAQ: Relationships with colleagues	0.113	2.908	**	1.1
<b>WORK CHARACTERISTICS</b>				
Lifting or carrying heavy weights	0.080	2.148	*	0.6
<b>Significant predictors of PRESENTEEISM</b>				
	Beta	<i>t</i>		R <sup>2</sup> Change (%)
<b>HEALTH &amp; WELL-BEING</b>				
GHQ	0.350	6.799	**	14.9
<b>DEMOGRAPHICS</b>				
Age	-0.164	-3.284	**	2.6
<b>PERCEPTIONS OF WORK</b>				
WOAQ: Relationships with colleagues	-0.117	-2.277	*	1.3

\*\* p<0.01, \* p<0.05

### 7.5.5. What happens over time? Longitudinal analysis

MLM was used to analyse the relationships between perceptions of work and the four main outcome variables (days off work, spells of sickness, self-reported performance at work, and presenteeism) as they varied over time. In essence, MLM is an extension of the multivariate regression analysis but corrects for the clustering of data from the three time points within individuals, rather than treating these as being independent. MLM enables us to look at differences between individuals across the three time points, as well as looking at changes within individuals at each time point (or 'wave').

The primary aims of this analysis were to establish whether:

1. there were 'between-person' differences in absenteeism and presenteeism according to general health, demographics and objective work characteristics

2. changes in health and perceptions of work within-person at each time point were associated with changes in absenteeism and presenteeism.

As the final 12-month data collection point in this study was completed at the beginning of March 2008, further analysis is underway to explore this data in more depth. Therefore, a brief overview is provided here to highlight the main associations of interest, categorised by outcome variable. Further details are available upon request from the authors.

### ***Number of days sickness absence***

The significant predictors of number of days sickness absence over the last 12 months are shown in Table 21. Reference groups are provided for the categorical variables. Significant differences were found in the number of days sickness absence reported according to both between and within person variables. Baseline GHQ scores were entered as a between-person variable to establish whether general health predicted sickness absence, while changes in EQ5D health thermometer scores at each time point were included as a within-person variable. The number of days taken off work was not significantly associated with either of these variables, suggesting that general health had little effect on sickness absence, as was the case in the cross-sectional analysis.

The objective characteristics of work at baseline were included in the analysis as between-person variables. Individuals who did not supervise other employees took significantly more days off work, as did those whose working hours were not flexible. Persons required to do heavy lifting reported more days off work. People with a lower number of contracted hours were less likely to take days off work, relative to those without contracted hours (e.g. casual workers) or those with more than 31 contracted hours per week. Interestingly, those who reported high stress jobs were also those who took fewer days' sick leave.

In terms of within-person changes in perceptions of work over time, increases in the perceived quality of workload resulted in fewer days off work. Conversely, increases in the perceived quality of the work environment variable corresponded to a significant increase in the number of days off work.

There were significant changes seen over the 12-month period of observation, with fewer sick days reported at 6 months (relative to baseline), and (again relative to baseline) significantly more reported at 12 months. Differences over time can be due to a number of factors, such as sampling bias at follow-up or seasonal variation. In this study, the 6-month data follow-up took place at the end of the summer holidays (August/September), while the baseline and 12-month follow up were carried out during the winter months (February/March). There are statistical methods for investigating changes over time and

adjusting for longitudinal dropout, which will be applied to this data during further analysis.

**Table 21. Significant predictors of number of days sickness absence**

<b>Significant predictors of SICKNESS ABSENCE</b>				
	Reference group	Beta	z	p
<b>TIME POINT</b>				
6 months	Baseline	-0.20	-4.09	<0.001
12 months	Baseline	0.22	4.59	<0.001
<b>OBJECTIVE WORK CHARACTERISTICS</b>				
Supervise employees - 'no'	'Yes'	0.80	3.17	0.002
Contracted hours - 21 - 30	None	-1.91	-3.10	0.002
Contracted hours - 31 - 40	None	-1.19	-2.18	0.029
Able to work flexible hours - 'no'	Yes	0.54	2.21	0.027
Lifting - often	Never	1.34	2.69	0.007
<b>PERCEPTIONS OF WORK</b>				
Quality of workload	N/A	-0.14	-8.97	<0.001
Quality of physical work environment	N/A	0.04	3.25	0.001
Mildly stressful	Not at all	-0.78	-4.18	<0.001
Moderately stressful	Not at all	-0.72	-3.76	<0.001
Very stressful	Not at all	-0.56	-2.66	0.008
Extremely stressful	Not at all	-1.29	-5.07	<0.001

## ***Spells of sickness***

Perhaps unsurprisingly, spells of sickness were highly correlated with the number of days off work but, owing to the smaller numbers of people reporting longer spells of sickness, there was less statistical power to detect significant effects of explanatory variables (Table 22). Once again, individuals who did not supervise other employees had significantly more spells of sickness. Changes in health status, as measured by the EQ5D, were associated with spells of sickness.

These findings could have potentially important implications for managing sickness absence, as it appeared that while the number of days off was unrelated to general health, longer spells of sickness were, suggesting that the relationship between health and short-term absences may be different than for longer absences. It may be that shorter absences are more closely related to acute problems (e.g. minor infections) whereas general health

is more likely to be associated with more serious/longer term illnesses that result in longer periods of absence.

**Table 22. Significant predictors of spells of sickness lasting more than a week**

Significant predictors of SPELLS OF SICKNESS				
	Reference group	Beta	z	p
<b>HEALTH AND WELL-BEING</b>				
EQ5D health thermometer (at each time point)	N/A	-1.24	-2.61	0.009
<b>OBJECTIVE CHARACTERISTICS OF WORK</b>				
Supervisor - 'no'	Yes	0.60	2.40	0.016

## Work performance

There was a significant increase in reported performance at the third wave of the study (Table 23). Older individuals also rated their performance more highly than younger individuals, and those whose jobs involved long periods of lifting or standing recorded better performance. Persons in intermediate level occupations rated their performance significantly higher than those in managerial occupations. GHQ score at baseline was strongly associated with a decrease in reported performance. Over the three time-points, improvements in EQ5D scores were associated with increased performance, as was more positive perceptions of workload.

**Table 23. Significant predictors of work performance**

Significant predictors of WORK PERFORMANCE				
	Reference group	Beta	z	p
<b>TIME POINT</b>				
12 months	Baseline	0.29	2.09	0.037
<b>DEMOGRAPHICS</b>				
Age	N/A	0.03	3.49	<0.001
<b>HEALTH AND WELL-BEING</b>				
GHQ (baseline)	N/A	-0.08	-5.22	<0.001
EQ5D health thermometer (at each time point)	N/A	1.182	2.62	0.009
<b>OBJECTIVE WORK CHARACTERISTICS</b>				
Lifting - often	Never	1.00	2.63	0.009
Standing - sometimes	Never	0.35	1.98	0.048
<b>PERCEPTIONS OF WORK</b>				
Workload (at each time point)	N/A	0.07	2.30	0.022



## Presenteeism

Presenteeism was measured by the SPS6 construct, and was modelled as a normally distributed random variable. Decreased presenteeism was found in older individuals. Both those contracted to work between 41 and 50 hours per week, those working many extra hours, and those whose work involved lifting scored significantly lower on the presenteeism scale (Table 24). An increase in the quality of the physical work environment variable was associated with lower levels of presenteeism. Higher GHQ scores were associated with increased presenteeism.

**Table 24. Significant predictors of work performance**

Significant predictors of PRESENTEEISM				
	Reference group	Beta	z	p
<b>HEALTH AND WELL-BEING</b>				
GHQ (baseline)	N/A	0.20	3.64	<0.001
<b>OBJECTIVE WORK CHARACTERISTICS</b>				
Lifting - sometimes	Never	-1.26	-2.00	0.045
How many extra hours	N/A	-0.05	-2.04	0.042
Contracted hours - 41 to 50 hours	None	-5.51	-2.09	0.036

These findings indicated that there were both similarities and differences between the relationship between health and work when analysed longitudinally as opposed to cross-sectionally. The MLM analysis, as in the cross-sectional analysis, indicated that both subjective health (Yellow Flags) and occupational factors (Blue Flags) independently predicted the absenteeism and presenteeism variables. However, the effects of objective work characteristics were more prominent in the longitudinal analysis. Changes in perceived workload independently predicted number of days sickness absence and performance, whereas relationships with managers and colleagues appeared to be the more influential variables in the cross-sectional analysis. Both methods of analysis indicated that general health had surprisingly little impact on sickness absence, particularly with regard to the number of days absence. Further analysis is underway to explore the nature of the changes over time and the differences between the cross-sectional and longitudinal analysis. Nonetheless, it is clear that occupational as well as clinical variables are associated with both absenteeism and presenteeism.

## **7.6. EMPLOYEE SURVEY DISCUSSION**

The aim of the study was to investigate the relationship between health, work, and well-being, focusing on the effects of Blue and Black Flags in particular. Both participating organisations had a number of policies, procedures and services in place for managing sickness absence and improving health and well-being. Nonetheless, the economic costs of sickness absence for these organisations were high, and based on staff absence alone the total cost across the two participating employers was approximately £6.2 million annually.

### **7.6.1. Cross-sectional analysis**

The employee survey revealed a high prevalence of common physical and mental health problems in the workforce, with 86% of respondents reporting one or more health complaints over the last month. Common health problems have a high prevalence in the general population and in primary care<sup>22-26</sup>, and so this is by no means unique to these organisations or to this region. The survey indicated that these problems impacted on performance as well as absence, but the way in which physical and mental health problems impacted on work was slightly different. The health complaints that are typically considered to be more 'physical' such as colds, flu and pain had a greater effect on absence, while a higher level of impact on performance was reported for common mental health problems (e.g. fatigue, stress, problems with mood). This study adds to the growing body of evidence on presenteeism in demonstrating that using absence as a marker for impact of health underestimates the effect of health on work. This has implications for how the impact of health problems is managed at work, particularly for mental health complaints, as interventions need to focus on work performance as well as sickness absence.

The results of the correlational analysis indicated that many of the objective and perceived characteristics of work (Blue Flags) were associated with measures of subjective health and well-being (Yellow Flags). Perceived characteristics of work, such as relationships with managers, quality of environment, reward and recognition, and workload issues, correlated with five of the six measures of health and well-being. Perceived levels of work stress (Blue Flag) were associated with the EQ5D measures, the SF12v2 Mental Score and the GHQ (Yellow Flags), but not the SF12v2 Physical Score or long-term/serious health conditions. Therefore, perceptions of work were most strongly associated with the measures of health and well-being that tapped in to mental well-being and quality of life, rather than the physical health measures.

Objective work characteristics (Blue Flags) were also associated with the health and well-being measures. Jobs that involved boring, monotonous or repetitive work were strongly associated with all health measures, with the exception of the SF12v2 Physical score. Work that involved repetitive movements was associated with poorer health and well-being in

terms of the GHQ, EQ5D health thermometer, and having a serious/long-term illness. Taking allocated breaks was associated with more positive EQ5D thermometer, SF12v2 Physical, and GHQ scores. Being in the lower SES groups according to the NS-SEC occupational categories was associated with worse SF12v2 physical, SF12v2 mental and GHQ scores. Longer working hours were associated with worse SF12v2 physical, but better SF12v2 mental health scores. As causality cannot be inferred using a correlational design, it is not possible to determine whether these data reflect that having a health problem makes work more difficult, whether the work environment influences health, or whether this relationship is bi-directional. Nonetheless, it is clear that there is an association between the characteristics of the work environment, i.e. the Blue Flags, and measures of subjective health and well-being.

In the multivariate regression analysis, the most consistent predictor of both sickness absence and performance was the GHQ. The GHQ focuses more on psychological distress than the other health and QoL indicators included in the survey; this independently predicted the number of spells of sickness of over one week over the last year, as well as self-rated performance and presenteeism. The number of days sickness absence over the last year was associated with how boring, repetitive or monotonous a job was reported to be. Having a serious or long-term health condition was associated with sickness absence. However, this relationship was not as strong as might have been expected, accounting for only 0.8% of the variance in the number of days absence taken over the last year. General health had a stronger effect on the number of longer spells of sickness (over one week) taken over the last year, and this was also independently predicted by the quality of relationships with managers. Together these issues still only explain a small proportion of the variance in sickness absence (between 3% and 4%) in this population.

The regression models for performance explained 30.6% of the variance in self-rated performance and 18% of the variance in presenteeism overall. The GHQ scores were the strongest predictors of the impact of health and work on performance and presenteeism, accounting for 26.3% and 14.9% of the variance in these models respectively. With increasing age people reported less impact of health on work. The objective characteristics of work appeared to have little impact on performance, although people whose jobs involved lifting reported higher levels of work performance once the variance due to general health had been accounted for. Perceptions of work independently predicted both performance and presenteeism. More positive perceptions of workload and relationships with colleagues were associated with higher levels of self-rated work performance, while more positive perceptions of relationships with colleagues were associated with lower levels of presenteeism. Although the relative additional independent contribution of perceptions of work to the models (between 1.3% and 3% of the variance) were small once

general health had been accounted for, the bivariate correlational analysis indicated that perceptions of work and measures of health and well-being were highly inter-related.

Causality cannot be inferred using a correlational design, and therefore perceptions of work may affect health and well-being and vice-versa. The impact of mental health and well-being appeared to be particularly important in determining the impact of health on work - particularly in terms of performance - which has significant implications in terms of the need to improve the way that mental health complaints and psychological distress are managed at work. This includes cases in which there is a co-morbid physical health complaint, for example in the case of musculoskeletal pain where the prevalence of depression and anxiety are high relative to the general population.

### **7.6.2. Longitudinal analysis**

The longitudinal analysis was carried out using MLM, which allowed for the investigation of the statistical effects of both within-person (level 1) and between-person variables (level 2). As was the case in the cross-sectional analysis both the general health variables (Yellow Flags) and occupational factors (Blue Flags) were associated with presenteeism and absenteeism.

The longitudinal analysis indicated that general health - either at baseline or changes at each time point - did not predict the number of days sickness absence taken. Changes in health at each time point (EQ5D health thermometer) were associated with longer spells of sickness absence rather than baseline general health (GHQ). Both baseline general health and changes in health over time predicted performance, while it was baseline levels of general health (GHQ) rather than within-person changes over time that predicted presenteeism.

Although unrelated to the general health (Yellow Flags) variables, the number of days sickness absence takes was predicted by a number of Blue Flags. People who didn't have any regular contracted hours (e.g. casual/shift workers), those who did not supervise other employees, whose jobs often entailed lifting, or were not able to work flexible hours reported a higher number of days absence. Improvements in perceived quality of workload issues were associated with a reduction in the number of days absence. While the cross-sectional analysis indicated that work stress was associated with poorer general health, the longitudinal analysis revealed that higher levels of stress were associated with lower levels of sickness absence. The cross-sectional analysis indicated that for stress and other mental health complaints, people were more likely to attend work but report impaired performance rather than taking absence. This highlights the complexity of the relationship between health and work. For people who are experiencing stress, therefore, interventions

that focus on presenteeism and supporting people in remaining at work are likely to be particularly relevant.

Longer spells of sickness absence were associated with changes in general health, and appeared to be influenced less by the Blue Flags issues. The only occupational variable associated with a greater number of longer spells of absence was not being responsible for supervising other employees.

In addition to general health, the performance and presenteeism variables were predicted by a number of occupational variables. People whose jobs involved a manual component (lifting and/or standing) reported higher levels of performance, and lower levels of presenteeism. This suggests that people in occupations that involve manual work are more likely to report absenteeism and less likely to report presenteeism than those whose jobs do not involve a manual component. In these cases, focusing on strategies that would enable people in manual jobs to stay at work by providing modifications and support could be useful (e.g. lighter or modified duties, reduced hours). Improvements in the perceived quality of workload issues were associated with improved performance. People with a high number of contracted hour and who worked more extra hours reported higher levels of presenteeism, perhaps due to the demands of their jobs.

While the cross-sectional analysis highlighted the role of relationships with managers and colleagues in predicting absenteeism presenteeism, the longitudinal analysis indicated that over the 12-month period absence and performance were sensitive to changes in perceptions of workload. The reasons for this difference are currently being investigated further, although the cross-sectional analysis indicated that the perceptions of work variables were inter-related, and the volume and level of control over workload is associated with the quality of inter-personal relationships. Using both methods of analysis, perceptions of work are associated with performance and absence independently of the health variables. These factors are potentially modifiable, and strategies that improve communication, enable better management of workload, and promote work-life balance could be of benefit.

### **7.6.3. Limitations and future directions**

The response rates and retention at follow up were limitations in this study. These are common problems in survey research, and while several strategies were in place to maximise response and retention rates these were not optimal. There are statistical methods for adjusting for dropout in longitudinal studies and we will be applying these to the longitudinal data during further analysis. Recruitment is likely to be a continuing challenge for future research and intervention work. Through the process of carrying out this work, the WiW Steering Group and research team identified a number of potential

challenges with recruitment and strategies that could be used in improving response rates in future work. For example, reducing the length of questionnaires so that they could be completed during a short break (e.g. during coffee break), administering the survey via brief face-to-face/telephone interviews, focussing on a small section of the workforce but aiming for a higher response rate within that section, ensuring that there is a high level of awareness of the project in both their managers and staff and gaining support for the project, and specifically targeting under-represented sections of the workforce.

The study was carried out in employers where several policies and procedures were in place to support work retention and rehabilitation. The commitment of these employers to improving the health and well-being of their employees was recognised through their involvement with the Corporate Health Standard award. Therefore, the Black Flags issues were not prominent in these organisations in terms of having appropriate policies and procedures in place. Participants were at work at the time of the study, and participants were primarily in the higher socio-economic groups/non-manual jobs. Therefore, it is likely that the people who are arguably most at risk of loss of work as a result of ill-health; i.e. those who are most disabled and/or have very physically demanding jobs, were in the hard-to-reach groups that were under-represented in this sample and future work should focus on capturing data from these groups. Furthermore, this study focused specifically on employees with a view to developing worker- and workplace focused interventions. Therefore, the experiences of those who have been away from work for a long time or who have never worked and are furthest from the labour market were not within the scope of the project at this stage and should be explored further in future research.

#### **7.6.4. Employee survey: summary and conclusions**

The findings of this study highlight the need to understand not only the impact of biological or physical health problems on the workforce, but also the psychological pressures and the social context in which the employees work. One of the aims of the WiW project was to identify measures that could be used as a simple assessment tool to identify people at risk of higher levels of sickness absence and problems with performance, with a view to identifying potentially modifiable variables. A number of the Yellow and Blue Flags variables included in the survey independently predicted the absenteeism and presenteeism variables. Based on the findings of the cross-sectional and longitudinal analysis, the variables that would be most appropriate candidates for use in assessment of risk factors for absence and performance include:

1. Health and well-being: GHQ and EQ5D health thermometer
2. Objective work characteristics: jobs that are boring, monotonous or repetitive, supervisory role, manual component (lifting & standing), ability to work flexibly

3. Perceptions of work: Workload, relationships with managers, relationships with colleagues

Improving the psychosocial work environment could have considerable benefits in terms of the well-being of employees and in reducing the economic costs for employers - particularly in terms of presenteeism. The complexity of the relationship between health and work is evident, and the needs of people with different types of health complaint and in different types of job may vary as these can affect absence and performance in different ways. Future developments of psychosocial work retention and rehabilitation interventions should acknowledge that reducing the impact of health on performance rather than focusing on absence alone could have considerable benefits, particularly for people with common mental health complaints.

## 8. WORKING WITH HEALTH PROBLEMS: A QUALITATIVE APPROACH

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### 8.1. INTRODUCTION

As demonstrated in the WiW employee survey, health can have a considerable impact on sickness absence and performance, while health, well-being and performance are all associated with the psychosocial characteristics of the work environment. While previous studies have typically investigated the components of the Flags Model in isolation, less is known about how the components of the model fit together for people working with health problems. Furthermore, little is known about lay perceptions of the impact of health on work and how these correspond to the evidence and theoretical models seen in the scientific literature in this area.

Previous studies have demonstrated that perceptions of work, including clarity of roles, demands and control, and the quality of relationships and support are predictors of sub-optimal work performance<sup>20</sup>. In terms of understanding sickness absence and attendance behaviour, the illness flexibility model<sup>19</sup> postulates that *attendance requirements*, the negative consequences of absence for the employee (e.g. impact on work tasks or colleagues), and *adjustment latitude*, the opportunities to work despite illness (e.g. moderations to work), act as 'push and pull' factors in determining sickness absence and attendance behaviour. The research on perceptions of work and the components of the Illness Flexibility Model focus on 'Blue Flags'. However, there is considerable evidence that Yellow Flags are important in understanding disability and incapacity for work. Black Flags - risk factors on an organisational level can also play an important role in influencing absence and performance.

An individual with a health problem is part of a system which extends beyond the workplace, and several things may need to happen in different parts of the system to effectively reduce the impact of health on work. This might include effective clinical management of health problems, access to health services, along with wider economic factors and availability of suitable work. In addition to clinical and occupational factors, wider social and cultural issues can be important in determining attitudes towards absenteeism and presenteeism; morality and work and the legitimacy of health problems are particularly salient issues in lay perceptions of work<sup>117</sup>. For the individual with a health problem, these different factors come together and interact. By investigating individual experiences, we can begin to see how problems in one part of the system can act as barriers to effecting change in another. Furthermore, investigating lay perceptions can



indicate how beliefs and attitudes about health and work are constructed within their social context.

While the quantitative research indicates WHAT influences absenteeism and presenteeism, focusing on the effect of and interaction between health and Blue Flags, the qualitative study aimed to start addressing HOW these variables influence absence and attendance. The study set out to personal experiences of health and work in-depth within their social context using both one-to-one interviews and focus groups from different perspectives; employees in general, people with musculoskeletal complaints, and managers. The qualitative study aimed to complement the survey findings, investigating what it is that makes remaining at work or returning to work difficult or facilitates this for people with health problems, and exploring how the different components of the Flags Model link up in practice.

## **8.2. QUALITATIVE STUDY AIMS AND OBJECTIVES**

The aims of this study were to:

- Gather in-depth information on people's views on how health impacts on work in a general sense and from a personal perspective
- Establish what people find difficult or useful in working with health problems
- Investigate how different parts of the Flags Model fit together in determining how health impacts on work
- Explore the potential for worker- or workplace-centred interventions to reduce the impact of health on work.

## **8.3. QUALITATIVE STUDY RESEARCH QUESTIONS**

The qualitative study focused on three primary research questions:

1. What are the challenges people face in working with health problems?
2. What do people find useful in remaining at work or returning to work?
3. What are the barriers to effectively implementing organisational policies?

These were explored from the perspectives of employees in general, people with musculoskeletal problems, and managers.

## **8.4. METHOD**

The qualitative study included a series of focus groups to explore the experiences of health and work for employees in general and semi-structured one-to-one interviews with people with musculoskeletal complaints and managers. This allowed us to capture data both within

a social context via the focus groups and to gather more in-depth information from individuals in the interviews.

### 8.4.1. Participants and sampling

Overall, 101 participants (66% female, 34% male) with an age range of 18-60 took part in this study. Sixty three participants participated in 14 focus groups and 18 participants with musculoskeletal pain and 20 managers within the organisations participated in one-to-one interviews. The demographic and occupational characteristics of the participants in the qualitative study are provided in Table 25.

**Table 25. Demographic characteristics of the qualitative study participants**

	Focus Groups	Manager Interviews	Musculoskeletal Complaint Interviews
Gender (M:F)	17:46	10:10	8:10
Mean age (SD)	38.9 (11.3)	44.8 (8.8)	49.7 (6.7)
% in a supervisory role	39.3%	89.5%	62.5%
% with degree or equivalent professional qualification	62%	85%	52.9%
% in NS-SEC groups 1 to 3 (managerial, professional, higher or intermediate clerical and administrative roles)	95.2%	100%	94.1%

A stratified sampling method was employed to ensure that a range of views were gathered across the organisations, job types, and by age and gender. Nonetheless, as is a common challenge in health research, men and those in lower socio-economic groups were particularly difficult to recruit. Routine and manual workers in particular were under-represented in the sample despite efforts to reach these groups during recruitment. Nonetheless, many of the participants had some routine and manual aspects to their roles (e.g. lifting, standing for long periods) despite not being in jobs that were primarily routine/manual in their nature.

### 8.4.2. Qualitative study recruitment method

To ensure that a range of views were represented across the organisations, a stratified sampling method was employed to ensure that a range of views were gathered in terms of gender, organisation and occupation. However, the sampling strategy had to be flexible due

to practical constraints, as recruiting participants can be very challenging - particularly with hard to reach groups.

Participants were recruited at the NG NHS Trust and MTCBC in a variety of ways, primarily through the distribution of leaflets outlining the objectives of the project and by word of mouth. A hands on approach was adopted and leaflets were circulated across a number of venues including; Aberdare Hospital, Mountain Ash Hospital, St Tydfil's Hospital, Prince Charles Hospital, Civic Centre, Ty Keir Hardie, and several of the units on the Pentrebach Industrial Estate in Merthyr Tydfil in order to raise the profile of the project and allowing researchers to reach the greatest number of people from across all spectrums of the organisations. Researchers were situated with an information stand, posters and leaflets in busy areas of the building, such as reception areas and the staff canteen, and were available to answer any questions that potential participants had. This on the whole proved a more successful exercise in the larger venues, such as the Civic Centre, Ty Keir Hardie and Prince Charles Hospital, but was more difficult in smaller, quieter locations including Aberdare & Mountain Ash hospitals and the industrial estate at Pentrebach.

Some of the challenges faced with recruitment included reaching employees that were not in office-based jobs and/or shift workers, and the lack of a staff meeting area or canteen facilities/lunchroom at some sites. It was also difficult to reach employees due to other pressures on their time during the working day. Nonetheless, the recruitment process was supported by the Human Resources (HR) departments in both organisations, who arranged for the research team to have a presence on site and in distributing information. Additionally, they facilitated the recruitment process by allocating and booking rooms to be used in order to conduct both the focus groups and the interviews in convenient locations for the participants and to prevent any major disruption to their working day.

### **8.4.3. Qualitative study design**

Focus groups and interview methodologies have different advantages and disadvantages, therefore both methods were used in this study to capture specific types of data. Focus groups are particularly effective in capturing social dynamics in the discussion of the topic of interest:

*"Knowledge, attitudes, and behaviour do not exist in a vacuum; they are socially contextual and socially constructed" <sup>113</sup>.*

Focus group methodology was used to explore people's perceptions of health and work in a social context, where both consensus and disagreement can provide information on how perceptions and attitudes are constructed. This study also sought to investigate the personal experiences of people with musculoskeletal pain (commonly associated with

chronic pain and incapacity for work) and managers (who may both have health conditions themselves or have employees with health conditions). One-to-one interviews were used to explore these personal experiences, as this would allow for more in-depth individual data to be gathered and the interview could include more sensitive content that might not be disclosed in a group setting.

### ***Focus group composition***

Group composition is critical in focus groups in encouraging disclosure and generating productive free-flowing discussions that contain useful data. Moreover, generating a productive discussion requires a good group dynamic, which also depends on the compatibility of the participants;

*‘When participants perceive each other as fundamentally similar, they can spend less time explaining themselves to each other and more time discussing the issues at hand’<sup>156</sup> (p. 59)*

To achieve this, the focus groups were divided based on gender and approximated SES (based on occupation). The size of the focus groups was formulated to maximise the amount of time for each participant to contribute, as well as providing enough individuals to generate balanced discussions. According to the recommendations of Morgan <sup>156</sup>, the range between six and ten participants would provide enough different opinions to stimulate group discussions while preventing each participant from having to “*compete for time to talk*” (p. 71).

The amount of data necessary in qualitative studies depends on the diversity of the people being studied <sup>156</sup>. The use of too many focus groups and interviews is resource intensive and can also lead to a theoretical saturation of data, where additional focus groups no longer yield new information. Nonetheless, it is necessary to include a sufficient number of focus groups and interviews to capture a range of experiences across each organisation (e.g. from people in different types of occupations). Subsequently, the number of focus groups in this study was determined by balancing these issues and on the basis of previous studies in this area<sup>117</sup>.

## **8.4.4. Measures**

### ***Semi-structured interview and focus group schedules***

Semi-structured question schedules were used in this study. The schedules for the focus groups and interviews with employees with musculoskeletal pain and managers were similar in content and structure, with each being modified slightly to ensure that they are appropriate for the method and participants (see Appendix 4 for focus group schedule).

The interview and focus groups centred around three main sections; general questions about the relationship between health and work, personal experiences of health problems at work, and knowledge of relevant organisational policies and procedures. Prior to the personal experiences section participants were informed that they could discuss someone they know rather than themselves if they felt more comfortable doing so, or had not experienced health problems that impacted on their work. The managers were asked both about their experiences of their employees' health and their own health at work. The organisational policies and procedures section included questions about what the processes were at work when employees were unwell, what support was available and what the barriers were to staying at work or returning to work. Vignettes and a ranking exercise were included in the focus groups to facilitate and stimulate the group discussions, which were not required in the one-to-one interviews. Finally, a summary of the key points of the discussion or interview was fed back to the participants so that they could confirm or dispute the key points. The discussion was then closed and participants were debriefed and thanked.

### ***Demographic data***

Participants provided information on age, gender, socio-economic status (assessed using the ONS NS-SEC method based on occupation), who they live with, marital status, and ethnicity.

#### **8.4.5. Procedure**

*Focus groups:* Within each focus group, two members of the research team were present to act as moderator and note-taker. At the start of the focus groups, written informed consent was obtained, and the need for confidentiality of the discussion for all group members was stated. The focus groups lasted approximately 90 to 120 minutes. When the focus group discussion has finished, participants were formally debriefed, were given a £10 gift voucher and were thanked for their time and contribution.

*Interviews:* The one-to-one interviews followed a similar procedure to the focus groups. A single researcher guided the interview discussion following the semi-structured schedule. Written informed consent was obtained prior to the interview. The duration of interviews was usually approximately 60 minutes, although this varied considerably between individuals. Participants were thanked and debriefed on completion of the interview, and were given a £10 gift voucher for their time.

#### **8.4.6. Ethical issues and confidentiality**

Ethical approval for the study was granted on 19.12.06 by the Bro Taf LREC. Written informed consent was obtained from participants prior to their focus group/interview. All

information provided in the focus groups and interviews was treated in the strictest confidence and was held in accordance with the Data Protection Act (1998). In the focus groups, the need for protection and confidentiality of each member as well as the comments made during the discussions was conveyed to everyone who participated. All focus groups and interviews were digitally recorded and fully transcribed. All names were changed during transcription to protect anonymity. Furthermore, details of specific illnesses or jobs that could potentially allow identification of individuals were removed or substituted with information included in parentheses. The digital recordings were deleted once the discussions have been transcribed and coding was complete. Finally, to protect the confidentiality of the participating organisations, the data was pooled and reference to specific organisations removed where required.

### **8.4.7. Data analysis**

The data from the focus groups and interviews was fully transcribed and anonymised. The data was analysed thematically using a line-by-line coding strategy, and was organised and coded using the NVivo version 7 qualitative software package. De-briefing discussions between the researchers and continual communication about emergent themes to meet consensus during analysis added greatly to the rigour of the findings. A table summarising the themes that emerged is provided in Appendix 5.

## **8.5. QUALITATIVE STUDY FINDINGS**

The findings of the qualitative study were organised around the three key research questions specified in the introduction:

1. What are the challenges people face in working with health problems?
2. What do people find useful in remaining at work or returning to work?
3. What are the barriers to effectively implementing organisational policies?

The themes emerging in the interviews and focus groups were organised according to the conceptual framework of the Flags Model to facilitate the process of exploring their theoretical relevance. As previously discussed, the components of the Flags Model are not independent of each other, and there is potential for considerable overlap and interaction between various components of the system. Therefore, although we have broadly organised the themes under the individual Flags headings, their relationship to other parts of the system is highlighted where applicable. To protect confidentiality, quotes where there is dialogue are marked E (employee), M (manager) and I (interviewer) to indicate the source of the comment.

### 8.5.1. What are the challenges people face in working with health problems?

As was demonstrated in the employee survey, health problems can impact on work both in terms of absence and performance. However, health problems can have wide reaching impact on people's lives and can have a profound impact on their mood, relationships with others and quality of life. In this section, we explore people's experiences of working with health problems and the challenges that they face in remaining at or returning to work.

#### ***Red, Orange and Yellow Flags***

The themes emerging under the three 'clinical' Flags were grouped together, as these were interrelated. Lay perceptions of the direct impact of health problems and psychopathology on work in terms of physical and psychosocial functioning were included in this section, as well as cognitive, affective or behavioural responses to illness that would come under the 'Yellow Flags' heading. Health could impact on work in a number of ways, which could pose a significant challenge to employees and their managers. Interactions were often found between the clinical and occupational Flags, for example where the impact of the health condition varied according to the nature of the job.

#### **Lay perceptions of the impact of health on work**

The impact health problems on work could make working more difficult on a day-to-day basis;

*"If you are fully functional, your day is a lot easier than if you are being dragged back with an ailment of some description, so throughput would obviously be affected"*

[Focus group]

In some cases, there were times when pain could prevent some activities at work altogether;

*"Back aches, definitely, because it can be so painful that you can't do your work. Like us, we stand a lot and sometimes you can't do that"*

[MS interview]

From the managers' perspective, the impact of health on work tended to be discussed in the context of how health issues affect other staff and in terms of absence and productivity. However, the impact of health problems reached beyond the individual, and it was generally considered that health problems in a member of staff have negative consequences for the whole team:

*"Well, musculoskeletal obviously - depending on the job somebody's doing, could have an effect on whether they could actually perform the job or not. For example, if you're a porter or if you're a nurse if you've got musculoskeletal problems there'll be difficulty in performing any role that requires any lifting carrying etc... Likewise, with stress THAT'S going to effect the way the person feels about themselves, and there's a fair chance they will transmit that into the general way they carry out their work and as such will not be as efficient as...and as productive as they would normally be"*

[Manager interview]

This highlights how clinical and occupational flags can interact. The effects of health problems on work can vary according to the type of health problem and the type of job, and the impact on health on work can extend beyond the individual.

People with MS problems discussed difficulties in being able to carry out routine tasks associated with their current role due to their complaint, particularly in relation to manual tasks. This could affect people across a wide range of sectors, from health care to more administrative roles. For example, a nurse working in an acute setting described the particular challenges relating to having a pain condition at work;

*"...obviously we can't go on to the ward with things like diarrhoea things like vomiting and, er, if you gotta lift patients even on a slide sheet - things like that, you can't do it, but if you've like...you've got a lot of pain in your arm or pain in your chest pain in your legs....things like that"*

[MS interview]

While employees would not be able or expected to work with specific health problems, particularly infectious complaints, chronic pain conditions can be more of a grey area as it is possible to attend work but certain tasks can prove problematic - in this case, causing pain. There are also aspects of administrative and managerial roles that can be physically challenging, including sitting, standing or lifting. For example, this individual worked in a clerical role;

*"Oh yes, I think so. In our job you know - carrying and things for me personally. I can't carry books and things the way, boxes of books, 'cos there's a lot of heavy lifting in the library and I can't do that anymore because of my problems"*

[MS interview]



The interaction between health complaints and the characteristics of work was also highlighted in the focus groups, where people tended to discuss difficulties relating to particular tasks and job roles, for example:

*"Well, if you're using a computer and you got a migraine or your eyes are hurting, it's very hard to be able to do as much work as you would normally do, because it's quite stressful then, and you know, 'cos it's like you got all that brightness if you got a migraine. I mean that's the worse thing, you know, so I think that would affect you if you were working on a computer- definitely"*

[Focus group]

Some people with MS problems discussed how they altered their routine at work to enable them to cope in their current role, for example;

*"I need to take more frequent rests. A lot more frequent breaks. Yeah, definitely more frequent breaks because sort of when you are typing a report it might take you two hours of typing and then my fingers and my hands will start to stiffen."*

[MS interview]

However, there were cases where this was not possible due to the demands of the job, particularly with reference to musculoskeletal problems;

*"Our staff, well possibly some of them, would not be able to do their jobs at all if they've got back problems. Like porters for instance - they are responsible for the heavy duty cleaning and deliveries and so on and so forth. So where as maybe I would be able to come back to work and think 'Oh well', as I can sit with a cushion or whatever, I can manage, and I won't stop for too long and I go back or whatever, they possibly couldn't do that."*

[Focus group]

Needing to access relevant health care services during work time may impact on work in terms of absence, but getting appropriate and timely support in managing the condition could greatly reduce the impact of the condition in the long run. For example, this individual had accessed physiotherapy services;

*"It just takes longer to do the same sort of tasks, particularly. It's not too bad because myself, it's pain whether I'm standing, sitting, walking, whatever, so I do get out now and again because I have got physio treatment and different aspects, and they've given me guidelines on activities to do to try and help. Apparently rest for a back is the worst thing you can do."*

[MS interview]

In this particular case, accessing health care services for the complaint had enabled this individual to keep active rather than resting, which can impede recovery for people with mechanical MS complaints. Others reported that they were unable to access health care services and/or their pain was being inadequately managed. For these individuals lack of appropriate clinical care could contribute to the impact of health on their work.

### **Employee and manager attitudes towards absenteeism and presenteeism**

From the perspective of managers, sickness absence can have a significant impact in practical terms, affecting productivity, the need for staff replacement, or modifying the workload or working hours of other employees. It could be suggested that their views on absence and presenteeism are therefore different to employees, for whom the consequences are different. The attitudes of employees as well as managers to absence were therefore investigated.

It was evident from the focus group discussions that in fact, employees were also concerned about the impact of health on work and felt a sense of obligation to their colleagues;

*"I think back to the conscientious thing as well. I think most people are fully aware that there's not loads of people to come in behind you, so if you are off it impacts on the team behind you - so there is a collective team responsibility come, guilt - come, you know. It's very easy to say 'I'm not well, I'm not coming in' and to be fully fit when you come back in, but you know they are short and there is somebody on leave and you try to sort of minimise the impact I suppose."*

[Focus Group]

This highlights a position which was prevalent amongst employees; that is, the guilt one feels for letting colleagues down when ill. This view that people have a 'responsibility' to try to work through illness was also evident in the comments of an individual who themselves had a musculoskeletal complaint in discussing the absences of another member of staff;

*"That would stop movement in his shoulder, so yes he's in a lot of pain there, but he could still type with one hand"*

[MS interview]

Previous research carried out in the south Wales region has demonstrated that a culture of presenteeism is the norm<sup>117</sup>; the legitimacy of absences can be an issue and there is a moral imperative to be seen to 'work through illness' whenever possible. Absences that are

not considered legitimate can be viewed in a negative light, and there is an expectation that people will attempt to adjust and carry on despite their pain. There is a clear link here between cultural norms and the way that health impacts on work. The moral stance that working through illness is the 'right thing to do' is likely to act as a driver to presenteeism. While this could act as a strong motivation to stay at work or return to work quickly, this position could have negative consequences if this acts as a driver to work when one is not well enough to do so, or where appropriate support is not provided within the workplace.

Establishing the legitimacy of mental health problems can be particularly difficult as these complaints are 'unseen' and there is often considerable stigma attached to them<sup>117</sup>. The stigma of mental ill health and stress was apparent in this study. The discussions revealed that there was awareness that stigma could prevent mental health complaints from being disclosed, as is evident in this account from a manager;

*"Because we did a couple of [return to work] interviews a few months ago now, and the three people we had in were - actually - went sick with physical stuff... But when we got through the surface, it was actually more to do with emotional stuff..."*

*"So although you rightly say the manager may look at it and say 'well there's a lot of physical stuff going on here', but when you scratch beneath the surface it can be a bit more emotional... But I think that's the thing isn't it? It's the stigma... It's the stigma of actually saying that they've got problems outside work or whatever it may be."*

[Manager interview]

From the employee perspective, the stigma attached to mental health complaints did indeed discourage disclosure. An individual who had been involved in a traumatic accident had originally been absent from work following surgery. However, the mental health issues outlived the physical injury, but they were reluctant to disclose this as a reason for needing further time off;

*"After the [accident] I was ready to come back in two months, but because everything else that's been going on in my life I was very stressed. I sort of extended that by another month. Not though - the sickness certificate didn't say stress; it was all just sort of aftermath of the [accident]. I think people are afraid to put sort of stress and stress and anxiety as doctors call it. People are afraid to sort of mention that as a reason for being off work because it's seen as a weakness, isn't it?"*

[MS Interview]

While stress was the primary reason that this individual did not feel ready to return to work, the pre-existing physical complaint was provided as the reason for absence to avoid attracting stigma. From the managers' perspective stress could pose a significant challenge as it was perceived to be becoming increasingly common and could result in prolonged periods of absence as highlighted by a manager;

*"I would say now it's (stress)... more common, but I still don't think people like to admit that they're stressed because I think deep down its sort of a human inhibition to think that you're not coping if you're stressed... We laugh - we joke and laugh as sort of senior [managers], and we say 'oh, stress is the new backache' because a long, long time ago you could go off with a backache and nobody would question it - 'cos you look after patients and you got a backache now..."*

*It seems like stress is becoming more sort of... common, and it's almost like it's the new backache... You tend to find that - you tend to sort of - stress manifests in all different ways, but as a manager you tend to realise when staff are getting stressed because of the way they act"*

[Manager interview]

The conflicting messages in this quote reflect the ambiguity surrounding stress at work; while it is seen as a common problem that can have obvious effects on people's behaviour and capacity for work, establishing legitimacy can be problematic and there is potential for stress to be used as an 'unquestionable' reason for long-term absence. This highlights the complexity of how health problems - and mental health complaints in particular - impact on work. It appears that the majority of people recognise that mental health complaints are common and can have a serious effect on the employee, their work attendance/performance, and on their colleagues; yet, there is considerable stigma surrounding these complaints and establishing their legitimacy can be extremely difficult, which poses a problem both to the sufferer and their managers.

## **Regional and socio-cultural issues**

'Yellow Flags' in the sense that the term is most commonly used in the literature (e.g. fear, catastrophizing, avoidant coping) did not feature prominently in the interviews or focus groups. Presumably, this was at least in part due to the design of the study, which focussed very much on health and well-being in the context of work. Nonetheless, it was clear that psychosocial factors relating to the individual and their lives beyond the work context could affect the relationship between health and work. An individual with depression describing their experience of being on sickness absence reported;

*"It was the depression, I think. It would...there were numerous factors really. Even though...when you are off sick, you think you should generally feel ill, but of course I didn't feel ill. It's just that I couldn't do certain things. I couldn't drive."*

[MS interview]

The pressures of life outside work could be a source of considerable stress to individuals, but again, these were typically not openly discussed in the workplace. People were particularly reluctant to disclose depression or stress and would find alternative labels where possible;

*"You lose you ability because you do your job - you can't walk around and that without the pain. I was off for six months. I didn't call it depression, I called it anxiety and I had a couple of things wrong. It wasn't just work - there was lot in work, but I had extra things as well and it is a difficult thing to overcome."*

[Focus group]

Pressures outside of work could actually act as drivers to work, as the financial implications of loss of work could potentially be catastrophic for the individual and their family. The following account illustrates these issues;

*"I just got divorced and I now have a huge mortgage to pay, thanks to my ex... Don't have insurance, don't have a choice. So there's a financial motivation - self-preservation. Erm, you know, I have two kids both of whom have their own disabilities that I don't talk about at work - one has got [condition] and my daughter's [condition], but none of my team would know that. So I've been dealing with two disabled kids, you know"*

[Manager interview]

Although forces outside work may be drivers to return to work, juggling work and home responsibilities could impact on work;

**E (employee) 1:** *"Sometimes it could be family related, isn't it? Problems with the family. You can't juggle work and see to the family"*

**E2:** *"It's hard, isn't it? If you've got worries outside of work it hard to function in work..." [Hard to concentrate]*

**E1:** *"You can't separate it. It is hard because work's work and family"*

**E2:** *"Sometime you do fetch your family problems into work with you, don't you? You've got to"*

[Focus group]

Caring duties, particularly childcare was hard to reconcile with work roles.

*"I mean, as nurses we haven't got the luxury of being able to put a child in a crèche because there isn't a crèche that works the hours [that nurses work]"*

[Focus group]

Therefore, it is clear that psychosocial issues beyond the workplace can have an impact on health and work, particularly balancing the demands of home and work.

There were also issues relating to regional context that could act as barriers to work. The culture surrounding work appeared to be similar on the whole to that described in previous studies in terms of social norms surrounding presenteeism and the legitimacy of sickness absence. However, there was a perception that there were specific cases where these cultural norms did not apply. For example, some GPs in the area were perceived to provide sickness certificates too readily or for too long a period. For example;

*"Well, we have our own Occupational Health doctor, but yes some of the GPs locally anecdotally are well known for just writing you a sick note for.... I mean we have staff coming in and they'll have sick notes for like six months for stress and we're like 'how can they say that?', you know?"*

[Manager interview]

There was a perception that these cultural issues could act as barriers to return to work when sickness absence was not the only solution and flexible working might be sufficient to enable people to stay at work, as illustrated in the following quote in relation to receiving treatment for a health complaint;

*"I'm just very aware that working in Merthyr Tydfil we are the sick note capital of the UK and that's widely acknowledged. I've seen that in the press and in the news and it feels like that, it does feel that people do have an awful lot of sick time here, and GP's in the local population seem to issue sick certificates for all kinds of things that I would question whether they are used appropriately. So whilst I accept that yes - they would need time off work for a hospital appointment or a course of treatment, erm, I think its perfectly possible for people to be attending for treatment and to be in work at the same time as long as they are facilitated to attend appointments, whereas the tendency is "I'm having treatment" therefore I'm going to have to be off work for a month or whatever and I don't know, it just feels like it is a crazy situation really"*

[Manager interview]

However, this perception that there is a culture of absenteeism and worklessness in Merthyr Tydfil could prove problematic for individuals who were unwell. The assumption that people are more willing to take time off work without legitimate (or sufficient) cause is at odds with the culture of presenteeism seen in the accounts of the employees who took part in this study. These could act as barriers to disclosing complaints or taking absence when required and therefore these issues need careful consideration. Furthermore, the regional context could place limitations on people's ability to work with health problems, for example with regard to the availability of alternative good quality jobs; the jobs in these employers were valued due to the conditions and security they offered. Worries about the impact of having taken sickness absence on employment and career prospects were expressed as a result, and therefore this could act as a driver of presenteeism. Undoubtedly there will be cases in Merthyr - as anywhere else - of misuse of the sick leave system. Social norms surrounding the circumstances under which this is necessary/acceptable are likely to play a part in driving this behaviour (e.g. when caring for a relative, when being harassed or bullied at work, or the quality of work is poor); these may well vary between communities and be appropriate targets for intervention where they act as barriers to work. However, the assumption that there is a general culture of absenteeism in Merthyr Tydfil should be challenged.

## ***Blue and Black Flags***

The 'Blue Flags' relate to occupational factors including objective and perceived characteristics of work. The culture surrounding health and its impact on work could certainly influence how people respond to health problems in the context of work. Furthermore, the psychosocial work environment and specific demands of different occupations can influence absence and attendance behaviour. As previously illustrated, health problems have an impact at work beyond the individual; their ability to attend work or complete their usual range and quantity of work, and behaviour towards and relationships with colleagues and managers can alter. Furthermore, absence and presenteeism have an impact on colleagues and managers in terms of staff replacement, additional duties, shift cover and vacations.

The implications of sick leave and illness can be different for managers and employees, as managers see the practical repercussions and for the general atmosphere and productivity in the workplace. For example;

*"...the stress side of it. I think a lot of people go off - you see that they take days off with flu or, you know. If they know that they're(II) no(t) be coming, you do find people take annual not sick leave if they haven't got any annual leave left. I mean the [organisation], like anywhere else, they want more being done perhaps than the rest with less people around to do it. So I think a lot of people feel the*

*impact of work - the workload is growing by the minute, and, er, you don't get any extra people to do it, so I just think people think why bother and phone in sick and, and then the people who are left got to pick it up and do it anyway. So that's one of the major problems in our department"*

[Manager interview]

This example describes people taking sick leave as additional annual leave if they don't have annual leave left, and the impact that this has on the remaining employees whose workload is increased due to the absence. The effect of this on the morale of the workforce can potentially be very negative, and this manager describes how staff can become demotivated under these conditions, further exacerbating the problem of absence in the department. This highlights how workload issues and pressure in the workplace can impact on sickness absence, regardless of whether there is a health problem present or how severe it is. Another example of this was provided by a manager where other types of staff absence and lack of suitable replacements were contributing to the workload problems for remaining staff;

*"...we've got a lot of people off - on sick and maternity leave and things, so we're even more stretched out, which means then things have to be covered and you probably don't get the breathing space you would do normally, or the time to do a bit on the computer or whatever - because then you're saying 'would you go and do this', 'would you go and do that', because obviously they got no-one else to do it and the service has to keep going."*

[Manager interview]

A concern for many was their relationship with their managers and their lack of ability to be supportive when someone is ill;

*"Don't the managers have enough training though to sort out staff with illness and how to deal with them? Because they can be very funny is the best way to put it."*

*But the thing is, most managers don't have people skills in the first place. They haven't got any man management. They can't say 'you look terrible go home, your eyes are down here your nose is dripping' and they say 'oh, you've got a cold have you?', you know, 'what do you think?', and they say 'oh, alright then' and you expect them to say 'oh, go home then'. They say 'do you mind doing that for me' - that's what it is, isn't it? Most managers haven't got any people skills and they don't know how to deal with things"*

[Focus group]



Establishing the legitimacy of health problems again emerged as a prominent theme, where individuals reported that they felt like they had to prove their illness to managers;

*"There are loads of times that I have been ill on a Monday morning and I have come in just so I can show them that I am ill so I don't feel bad about going home. I did that Tuesday - I come in..."*

*"But that is then down to the managers to spot that, isn't it? To say 'come on now, this is ridiculous, you need to be at home'. That's your conscience as well isn't it"*

[Focus group]

The role of managers and relationships between managers and employees were therefore important in influencing absence and presenteeism. In line with the employee survey, the findings of the qualitative study indicate that the psychosocial work environment (Blue Flags), including workload issues and relationships with colleagues can influence the extent to which health problems impact on work in terms of both absenteeism and presenteeism.

### **8.5.2. What do people find useful in remaining at work or returning to work?**

Having discussed the challenges that the impact of health on work can pose for employees and employers alike, factors that facilitated remaining or returning to work were investigated. Again, these themes are arranged under the headings of the Flags system.

#### ***Facilitators of staying in work: Red, Orange and Yellow Flags***

In terms of facilitating work or return to work, themes relating to improvements in the health problem itself and 'clinical' psychosocial risk factors were described. Returning to work could be viewed by employees as an important part of recovery, and this was reflected in the comments of an individual who had been absent for a period following an accident;

*"'cos I think that, you know, if you dwell on things you can make it worse as well. So coming back to work helped you actually to get over the accident."*

[Focus group]

A number of support services were available both in the local area and within the participating organisations that could improve the management or treatment of the health complaints people experienced. The availability of health care and support services provided by organisations on site was beneficial to several employees. Some utilised the physical therapy services available to employees;

*"I was having physiotherapy twice a week, and I gotta be honest the physios downstairs were absolutely great".*

[MS interview]

*"But now, if you have a bad back or a bad neck or whatever we have got staff health they refer you to physio, 'cos I was with my back wasn't I. I had acupuncture and everything like that and you know - they phone staff health and sort it out urgent because you are a member of staff, and they are really good that way and you have your physio and keep having regular appointments with them..."*

*"...I paid to see a physio a few times but I didn't think he was very good. Well, when HR got me in touch with this other guy and he gave me an eight-week program and he explained to me what was happening and I did a back care programme through my doctor, which was like four sessions. There was a physio there, but there was no hands on. We were doing exercises and explaining how the back works and once you understand it, you can avoid certain activities and certain things and so far it seems to be working. It still takes me five minutes to get out of bed in the morning"*

[Focus group]

For others, the staff counselling service had been useful;

**E (employee):** *"...I just couldn't cope. I missed five weeks [work]. I have had some counselling and she is brilliant because she puts things into perspective for you and, erm, I feel so much better"*

**I (interviewer):** *"That's great - that's really great"*

**E:** *"And they have been brilliant with me I got to be honest, the managers and that they have been really good to me"*

[Focus group]

It also appeared that where early intervention and support in the workplace was offered, this could prevent staff from needing sickness absence;

**I:** *"Have you had to use Occupational Health for any reasons?"*

**E:** *"I have, yeah."*

**I:** *"Were they supportive, and what did they do?"*

E: *"Yeah, I did use the counselling over there and they were very good. They did actually stop me going off on the sick."*

[Focus group]

Offering support at an early stage seemed to be commonplace for the participants in this study, and this was perceived to be beneficial.

There seemed to be an important link between the clinical and occupational Flags, where the illness and management of their condition (Yellow Flag) could be helped by discussing problems with their line manager (Blue Flag), which can result in positive work environment changes (Blue and Black Flags). This in turn may assist in preventing the condition from worsening. How the clinical and occupational Flags interact could be particularly important in terms of work retention. Managers can support employees in making them aware of services and encouraging them to utilise the help available for their illness, as highlighted by this employee;

*"You can go see an occupational health advisor if you are in work and they can refer you for, like for me physio treatment and things like that. So my manager actually suggested that I go down that line. So he's been very good at that".*

[MS interview]

### ***Facilitators of staying in work: Blue and Black Flags***

The Blue Flags were by far the most widely discussed factors in terms of reducing the impact of health on work, whether in isolation or in relation to the other components of the Flags Model. For example, relationships with managers can be associated with general well-being, as seen in the employee survey. Good relationships with managers can be vital in tapping in to healthcare services available to employees to improve the management of their condition and in enabling organisational policies, such as flexible working to be implemented. Feel supported by managers and colleagues, and whether people feel that their role is flexible enough to allow them to continue working appear to be vital components of reducing the impact of health on work. Furthermore, motivational factors, such as job satisfaction and relationships with managers were seen as important for return to work;

E1: *"Well, working with patients, perhaps. If they are nurses and things and they want to help and they want to carry on that way. That would give them the motivation to get back into work and..."*

I: *"So it's a personal satisfaction?"*

E1: "Yeah."

E2: "Good management - if they are lovely. Got good management to go back to."

[Focus group]

Relationships with managers emerged as a major theme once again, as this was seen as key in enabling return to work;

*"But it comes back to your manager and you relationship with them again then doesn't it, I think [name] and I share the same manager and regardless of what it is, we wouldn't have any qualms about going to her or self-referring and she would know if we had done that then there is a reason for it. It all comes back to the relationship again doesn't it"*

[Focus group]

Some of the managers commented on the need to be aware of what was going on with their members of staff. One manager felt that he was able to discuss personal issues with a member of staff who was having family problems, and noted;

*"...you have to as a manager - you've gotta be sensitive to what's going on with your staff".*

[Manager interview]

This manager was able to create an environment where he could be open with staff, which thus meant he was better able to support them in their roles and could help them manage tasks and diaries.

In general, from both the managers' perspective and those with musculoskeletal problems, the topic which tended to be discussed in most depth was the ability to build working hours back up after a period of absence. Gradual re-entry to work was discussed by several people, where easing back into work (Blue Flag) after utilising services that were provided for them (Clinical & Black Flags) was perceived to be useful.

*"I manage staff and I've had several, obviously not going to mention names, but I've had several over the last few months that have actually gone through done the Occupational Health route within the [organisation] and they've had actually brilliant support. This is why one of our staff went off with a bad back. He was off for the best part of 3 months. When returning to work, the first week he returned for 1 day. Second week 2 days. Third week 3 days. It was a gradual..."*

[Focus group]

Gradual return to work was viewed as being particularly useful in adjusting to changes that may have occurred in the workplace during an extended period of absence, for example;

*"I did an interview yesterday with a chap over at [department] and they say that the technology over there is changing quite a lot quite quickly, so if people are off for a long time then that is a concern that you know they need to come back and...sort of get up to competency again and that it's fairly routine for people in that department to keep being kind of assessed really on their uptake of stuff... so you find in your work that things change quite quickly so that that would have to be built in as well some way"*

[Focus group]

Re-integrating people gradually into work again or being able to change working arrangements seemed to be major factors in staff returning to and staying in work. People with MS problems often discussed the effects of having flexible working arrangements;

*"...(if) you (have) got other problems, you know you got the flexibility we're able move shifts or change hours round or something like that".*

[MS interview]

Others noted that they were able to build their hours back up after a period of absence;

*"...when I was off in May, I came back, erm, and I worked from 9.30, erm, I worked less hours for the first week. I was back, erm, gradually building up to full time"*

[MS interview]

Some managers referred to the organisational policies of flexible working coming into practice. This following quotation refers to a case where an employee was supported in this way in returning to work;

*"Somebody had had some [major surgery] in fact, and was ready to come back but was - we were advised that it should be initially on a part-time basis, and so we, we've got provision. Again, it's in the [organisation] policies to be able to do that, or to change their duties accordingly, you know. If perhaps it's an injury of some description, which they're recovering from, we would be able to accommodate on that, you know, within the constraints of health and safety and things like that as well..."*

[Focus group]

Again, relationships with managers and good communication facilitated this process;

*"Er, well as the boss said 'you do as much or as little as you can do - it's entirely up to you', which is good because, er, if I felt I could only do 3, 4 hours I could do that and go home"*

[MS interview]

Likewise, this employee with an MS complaint found flexibility in working hours useful in returning to work;

*"They say 'oh come in and try it, and see how you go - and if your not well go home or we can...' - they were quite willing to change my working hours if it was too long a day. If it was too long I could work half days and things. They were very accommodating to get me back"*

[MS interview]

Several people, including those in supervisory roles, felt that offering support was very helpful to staff in remaining in work, even if it was a relatively minor issue that needed to be dealt with or supported.

*"If it was affecting their work in any way they would come to me and we could work out how we could support them to work with that problem and change maybe the seating or their environment or what tasks they did. And in any eventuality if somebody wasn't feeling very well I would presume that they would be getting some advice for that. Whether it's a doctor or Occupational Health or if I could help them to do that then I'm happy to do that."*

[Focus group]

People reported that during periods of illness colleagues could be helpful, even in small ways. Practical support from colleagues could also be useful in helping them return to work;

*"...I came into work everyday because one of my colleagues drove me in, so it depends on the support sometimes that you get. If a colleague hadn't driven me in, I couldn't have got to work, so you know..."*

[MS interview]

Importantly, managers have a perspective as a manager and as a member of staff within the organisation. While managers play an integral role in supporting employees with health problems, they too may have health complaints that impact on their own work; their

relationships with colleagues and senior managers are equally important in determining the effects of these complaints. Similar issues affect managers if they need to take sickness absence as for their employees. However, they have different responsibilities and the implications of absence can be different due to the nature of their work. For those with chronic or recurrent complaints, the support of their colleagues can be vital in allowing them to continue to work effectively;

*"Constantly really, it is a problem when I can't do something. Then they all [colleagues] pick up that or rearrange my diary, but they basically know that I manage it very well and they ask me what I want to change in my diary this week to accommodate my problem, or more recently I've been able to work from home one day every fortnight so that I can rest a little bit and catch up with all the workload I can't do when I'm in work."*

[Manager interview]

Many managers, as well as employees, viewed flexibility in working times and roles as important in staff retention, and they often reported making adjustments to accommodate people's needs. For example;

*"Yeah, we are very flexible to the best that we can be, er... to help out as much as possible. We did have one lady where we put a post out, which was, er...that was three to seven, but it wasn't on a ward - we were looking at some other area. She had childcare issues and a partner issue, so we changed that shift then to start at one o'clock, er... We said to her obviously initially it would be five to six weeks, because we needed to look at how it would affect the people working in that area, er... But it worked out in the end quite well, because they preferred having someone there on hand".*

[Manager interview]

Managers also reported a positive attitude towards offering their members of staff flexibility in arrangements so as to prevent stress and pressure and the need to take sick leave;

*"They [problems] may mesh together and sometimes it could be something outside of work that is relatively straight forward to resolve by altering working times or working days for a temporary period of time. You know, I've got a member of staff at the moment whose [family member]'s been injured and she's got trouble with childcare, so she's reduced her hours for three hours a week...When [they get better], she'll increase her hours again. It just takes that pressure off so that she*

*knows she can get her children to school and she can get into work at a reasonable time and carry out her job. Otherwise she'd be under huge pressure."*

[Focus group]

Managers reported feeling that it was important to remain flexible, particularly for those with children. The following quote is from a manager who acknowledges that in reality childcare issues are important to employees;

*"Child commitments - I know when they're ringing in with a 'oh, I got a migraine' - oh, I know... 'You sure you're not taking the children to school then' ...Erm, and you have to. Childcare commitments - that's important and I'm quite flexible, you know... As I say, they come in -there's two that got young children, so you know, they come in at ten past nine - start time is eight-thirty. When they're here, they give me 110%..."*

[Manager interview]

In this case, there has been a mutually beneficial arrangement where the manager has been accommodating and flexible, while the employees have in turn given all they can while they are at work. Nonetheless, this example as illustrates that some managers believe that employees may claim to be unwell when in fact they need to deal with childcare issues. This can be contentious as managers may also feel that employees don't take advantage of the official child friendly policies as set out by the organisation;

*"...and again there's plenty anecdotal evidence, both here and other organisations I've worked for where, erm, if the child is ill somebody will say they're sick. They won't necessarily take advantage that we have flexible working policies that people are allowed carer's leave. So rather than phone up and say, erm, 'look I've got my child off ill today - I can't come into work. Can I take some carers leave?', people will phone up and say 'I'm sick'. So what happens then? Our sickness absence data becomes some what exaggerated..."*

[Focus group]

Therefore, Blue Flags were of central importance in determining people's ability to remain at or return to work if they had a health problem, particularly via their relationship to the Black Flags. Organisational policies of graded re-entry to work, flexibility, adjustments to work, along with good relationships with colleagues and managers were particularly important both from managers' and employees' perspectives.



### 8.5.3. What are the barriers to effectively implementing organisational policies?

The term 'Black Flags' refers to risk factors at an organisational level that can moderate how health impacts on work. As described in the employee survey results, the organisations participating in this research have a number of policies, procedures and services in place to improve employee well-being, work retention and rehabilitation. However, effective implementation of these in the immediate work environment of employees is a major challenge for organisations. In this section, we describe the barriers to implementation of policies discussed by employees and managers.

The findings presented so far clearly demonstrate that the components of the Flags Model do not occur in isolation; they are part of complex systems and are strongly inter-related. In addressing the third research question, we explored how the pieces of the complex jigsaw of the Flags Model come together. The role of managers in allowing and supporting employees in accessing relevant health-care services, implementing organisational policies on a local level, and fostering positive relationships and communication has been highlighted above. In this section, we have identified some specific examples to demonstrate how different parts of the system need to come together in reducing the impact of health on work.

There were cases where good policies were in place but were not effectively implemented. This happened predominantly where there were practical restraints relating to the specific condition or job, or where there were difficulties with inter-personal relationships or communication. Although organisational policies support staff in returning to work with modified duties, this does not always work in practice due to the demands of the role, for example in nursing;

*"...in nursing, if you're looking to redeploy somebody after having illness or if they've got a long term condition, we often say - or we redeploy them into a lighter... but in nursing there's often not a 'lighter', and I struggle with that because it's... you may remove them off of an orthopaedic ward where the patients are very immobile - they're on beds because they've got legs in plaster and spinal fractures, but there's not that many jobs in nursing which will - are deemed as lighter, because whatever - whatever job in nursing... you still have to look after patients. So whether you, you know - and if you're in an outpatients department where you're not actually looking after patients in beds, you're still pushing patients in chairs. You're still helping patients get on to a couch for a doctor to examine, you're still lifting heavy notes, you're standing around a lot in an*

*outpatients department. There are not that many jobs in nursing where you can say it's lighter."*

[Manager interview]

One of the managers who was also a carer and had taken time off for health problems discussed the barriers in implementing organisational policy:

**M (manager):** *"I suppose I don't know really, its difficult to work out 'cos they have all these policies they refer us to, you know - family friendly, you know. But what I find in [organisation], a lot of the policies are just paper exercises."*

**I (interviewer):** *"Uh hum"*

**M:** *"You know, people have tried to get child - oh, what's it called? Paternity leave - because of illnesses with their children and it's turned down."*

**I:** *"Right"*

**M:** *"So what happens then is they don't bother in future and they just go sick."*

**I:** *"Right, I see - so there's a lot of policy and it isn't always implemented properly?"*

**M:** *"No, and then people then have a negative view of a lot of the policies then that are there for staff."*

**I:** *"Uh hum"*

**M:** *"So it does have a negative effect, even if a new policy comes out people tend to say 'oh yeah, a new policy, that's something else to read - toilet paper {laughter}. It's not worth anything, but it all looks very glossy and it all looks very nice when its all packaged up and put on a shelf, but you know in actual reality it doesn't work"*

**I:** *"It doesn't translate into the day-to-day running of things?"*

**M:** *"No, no."*

[Manager interview]

The implementation of policies can often be problematic for organisations, particularly where they are large and diverse in the range of work they carry out. This manager also discussed the availability of staff counselling, but concerns about confidentiality were a barrier to having using this service for employees. This also relates to the earlier discussion of stigma relating to mental health complaints, which could act as a barrier to people accessing these potentially valuable services within the workplace.

**M:** *"It's decided by themselves or the GP actually, erm around here GP's will give them a handful of tablets and a note and to be honest I think we would get people back into work a lot quicker if we offered them a counselling service. Now I know the [organisation] does offer a counselling service, but because it is not confidential, if you go for counselling you have to go to [in the organisation] past the HR department."*

**I:** *"Right"*

**M:** *"So everyone knows you are going to counselling"*

**I:** *"So it's not very helpful?"*

**M:** *"No, it's really quite [bad]. Erm, and in Unison we have set up confidential counselling and its being used by other [organisations], erm, and it's been quite successful and its getting people back into work a lot sooner..."*

**I:** *"Yeah..."*

**M:** *"...than they would normally go back to work because they are having independent confidential counselling"*

[Manager interview]

Having counselling in place was considered to be a good organisation policy, but confidentiality was an issue and could act as a barrier to using the service, which could impede the success of the service in supporting work retention and return to work.

There were also examples where delays in procedures being put it to action could result in longer absences;

**M:** *"I don't think work wanted me to stay off that long, but the HR department dragged their feet so long in sorting out the problem."*

I: *"Oh right, so you kept in contact and you knew what was going on - that was more help?"*

M: *"My choice - my choice not the [organisation] choice so much."*

I: *"Oh - your choice?"*

M: *"There is the [organisation] policy where you do keep in contact, but it was my choice to actually see someone every week"*

[Manager interview]

Awareness and knowledge of sickness absence policies amongst employees was highlighted as a concern by one of the managers;

*"He wasn't sure where he stood with the sickness policy. Which I suppose is partly his fault for not knowing about it, and partly ours for not making sure he knew about it. So, but I would have said to him well, if you are that - if you literally have got that bad a throat, then just send a message through somebody else saying 'I'm still poorly, saw my GP', and then get cover for the second week. Which is... What happened? He came in because he didn't want to appear to be - he wanted to authenticate the fact that he was ill. But that was his choice"*

[Manager interview]

In this case, the employee had not followed organisational procedure in terms of reporting absence and providing a sickness certificate. Having had the procedure explained by his manager, he chose to return to work rather than get the medical evidence required to take further time off. This again comes back to the issue of legitimacy in sickness absence; the organisation has a procedure in place that allows for a period of absence providing that the employee provides evidence to support the legitimacy of their health problem. There can, however, be situations where people are aware of and understand a policy, but following that organisational policy is difficult;

*"You need a medical certificate, they should be concurrent. That can be problematic for people (when) they genuinely have practical difficulties in supplying the certificate promptly. Erm, of course, that can in turn impact upon their salary so that can be quite stressful"*

[Manager interview]

There are a number of situations where this may be problematic, for example, if people are unable to make a prompt appointment with their GP, they are unable to get to their GP but

where a home visit would not usually be required (e.g. if they had gastric flu), or they were too unwell (either physically or mentally) to take the necessary action. Nonetheless, the system is usually effective in terms of ensuring that the absence is legitimate, which is necessary for the employee as well as the employer in terms of securing their rights and obligations.

Several people discussed the introduction of a new policy of phoning in everyday when absent until a doctor's certificate had been received. This policy was generally viewed very negatively and was seen as detrimental to recovering from illness;

**E:** *"And they have got this policy now within this [organisation], which I think is the stupidest policy I've ever heard in my life. You have to phone in every day. Now, if you were ill and you had the flu - I mean I had the flu last year and I was in bed for three days and I couldn't lift my head off the pillow - but that's the last thing you want to do is pick the phone up and tell them when you can't hardly speak, never mind anything else.*

*It has to be within an hour of your normal hours of work so if you haven't slept all night so five o'clock in the morning because it has happened to me before. Five o'clock in the morning I finally got to off to sleep I have to set my alarm for nine to ring in to say I'm ill.*

*And if you have been coughing all night and you can't breath for one thing and another - I just finally drop off, that's on your mind as you drop off - that you have got to ring here by half past eight in order to pick the phone up to say I am not coming in today"*

**I:** *"So can someone phone on your behalf?"*

**E:** *"No, unless it's hospital"*

[Focus group]

This policy was viewed negatively by managers and employees alike. Managers did not want to be seen to be 'picking' on people or pressurising them, while employees felt they were 'under surveillance'. There were reports that people had existing processes for communicating with their managers about sickness absence, which they had found to be more practical;

**E1:** *"I wanna know why. Alright, you have to ring in, but why can't you ring in and say 'well I am awake at half past four' and say 'I am awake now, why*

*can't I ring and leave an answer phone message and say I am ill I am not going to be in tomorrow, I'll ring you later on in the day or ring me later on'."*

**E2:** *"What happens if you don't do it? Because I've not been ill yet, but what I have always previously done is ring my manager directly on his mobile because saying, for example, you are ill all weekend and you could give him a ring on a Sunday morning and you can say 'look, I am really bad, I don't think I am going to be in the - tomorrow, if not I will see you in the morning and if not I will give you a ring tomorrow afternoon and see how it's going'. How is it all logged?"*

**E1:** *"I got to be honest, I think it all depends on your line manager because the sickness come in and I was off and I didn't phone in everyday. I thought, oh, I just can't. He never said anything, he never did anything, but you just can't. You just can't get up and that's the last thing on your mind"*

[Focus group]

While the aims of this policy were to keep in touch with staff and reduce non-legitimate absence, people often reported feeling resentful and irritated by this procedure. While the policy appears to be a good idea in theory, in practice it was not well received by employees or managers.

Although many of the return to work procedures that were in place were often viewed in a positive light, such as return to work interviews, redeployment, and flexible working could sometimes be perceived in a negative light by employees. In some situations, where people felt genuinely unable to return to work due to health problems, the support mechanisms in place could be perceived as undue pressure to return to work;

*"They put more pressure on you to come back to work, I think. Yes, one of the boys here was ill and he was quite pressurised to come back and do light duties."*

[MS interview]

The term 'presenteeism' can refer both to the way that health impacts on work for people are able to attend work as well as individuals who attend work when they are too unwell to do so, and both types of presenteeism were reflected in this study. A number of people suggested that from an organisational perspective, they felt pressurised into coming into work when unwell. For example, in the following exchange, employees describe the pressures people feel themselves, as well as the pressure they perceive from the organisation in returning to work:

E1: *"Because they feel guilty. They are not..."*

E2: *"And they keep pressurising to come back"*

E1: *"You get phone calls as well. When you do... like you go do off [site] duties and things, they don't know if they're back in work and they ask you at the house 'are you coming? Do you know when you're coming back to work?' Pressurising it. They don't MEAN to. They've got a job to do as well, but..."*

E2: *"But when somebody phones in sick you have to say to them 'Are you going to be at home or are you going to be in tomorrow?'"*

E1: *"It's horrible, but we do it!"*

E2: *"They [employees] do feel guilty. I had someone phone in sick the weekend and the first thing that she said to me is 'I'm sorry that I've let you down', you know, but she was really genuinely unwell. And she still tried to come back to work too early"*

[Focus group]

Others feel that the procedure of back-to-work interviews are do not encourage return to work, but rather they feel under suspicion as a result:

E: *"I know with me every back to work interview I felt like the managers were saying to me 'you're lying'."*

I: *"Really?"*

E: *"Every single interview. And that's normal"*

[Focus group]

A lack of consistency on an organisational level in initiatives to manage absence could also be challenging for managers;

*"So they are really stamping down on sickness at the moment and the trouble is in [organisation], they start off with a wonderful scheme to reduce sickness then they let it drift and they come running back and start stamping on people and then they let it drift again, so there is no consistency or continuity with their approach"*

*to sickness and at the moment they are on a big sickness drive again and erm, pulling people in left right an centre and disciplining"*

[Manager interview]

This sense that sickness absence was viewed as a disciplinary issue could cause considerable problems; while this approach is designed to reduce absence that is not legitimate it can have a negative effects for employees who are genuinely in need of a period of absence or support in remaining at work.

There were also a number of cases where individuals were reluctant to take sick leave due to concerns about how this would affect them at work – particularly with regards to career prospects. For example, there were concerns that taking sick leave may prevent people from attaining new positions or future success:

*"Some people have concerns about their record, don't they? And how it affects getting other jobs if they've got too much like that."*

[Focus group]

This member of staff had told of how she would take annual leave instead of take sick leave so that this would not have a detrimental impact upon her record. Other members of staff seemed to cite social attitude and upbringing as a reason for refusing to take time off as annual leave when ill:

I: *"So why did you take annual leave and not sick?"*

E1: *"Cos that's the way I am, and I don't want to take sick and it's the way you were brought up. It was drummed into you. My father was the same, my mother. I don't want sick for that, I will take one day of my annual leave"*

E2: *"It doesn't matter if take one day or three months - its one mark against you"*

I: *"Oh right, I see"*

[Focus group]

Conversely, there were also cases where people were unable to access the support they should have been able to from an organisational perspective due to local difficulties, which could force them in to taking sickness absence where that was not necessary or appropriate. For example, some individuals found that although flexible working was officially available, they were not able to take advantage of it. Again, this could relate to



the willingness of individual line managers to implement policies on a local level. The following extract describes a situation where an employee needed flexibility to deal with a family problem, but was not able to take advantage of this option;

**E:** *"Yeah, she couldn't get any sort of leeway or flexibility around her job when she did explain that and so the only alternative available to her was to be late and phone in and say she was ill. So I think sometimes this - it's also getting the trust of your staff and being able to support them through a number of different issues. Whether that's flexible working or family friendly policies. And if you can implement those, that tends to impact on the sick-leave so that when people are sick they are no problem coming and telling you that. And asking for support."*

**I:** *"So why do you think she chose to call in sick instead of saying, you know, 'Can I have flexibility' or 'There's family problems I need to deal with'. Why do you think?"*

**E:** *"She didn't have hours - she didn't have the option to work flexibly and she had pointed that to her manager and they couldn't do anything about that because those were the hours she was meant to work. So phoning in sick was the only opportunity she felt she had without losing any pay and actually keeping her job. And so she wasn't there for that half hour that she phoned in sick anyway, so it would have been much simpler to try and use flexible hours and then they'd know when she was ill and when she wasn't ill. So by being a bit more flexible, I think we can influence how people feel stress, or they're ill, or feel the need to not be here because they are not well. I feel we can support them in that and when there is a, don't mean to say 'genuine' illness, but when they are sick they don't fear being sick or ringing in sick because they know you'll support them with"*

[Focus group]

Another issue that arose was the ability to access services or support without going via line managers. For example, the following discussion took place during one of the focus groups;

**E1:** *"We all have to report to our managers"*

**E2:** *"You always have to report to your manager and if you don't it's seen as not respecting them and that's going to make more problems"*

**E3:** *"I don't know, I think I would probably have to disagree with that we have an Occupational Health scheme and you can self refer into that"*

**E1:** *"But it would make your life awkward in work if you did though"*

**E2:** *"Very awkward, I wouldn't want to do that"*

**E3:** *"But your manager doesn't have to know about it"*

**E1:** *"Oh, in this place you have got to be joking, everybody knows everybody"*

[Focus group]

While people with good relationships with managers found their support invaluable, the obligation to report to them and concerns about them finding out if an employee accessed other support without their involvement could act as barriers to accessing the support available for people whose relationships with managers were not positive. While it was possible to access Human Resources or Occupational Health without going via a line manager, this was felt to be inappropriate. At an organisational level, there were examples where staff felt that having human resources further involved in managing sickness absence at a local level was not conducive to facilitating working with health problems or fostering good relationships at work. For example,

**E:** *"Even though I didn't have sort of 'official' support at work my manager supported me, but also for all his bad points I was coming in to see him and saying 'look, I do want to come back, I just can't function at the moment'. I tried coming back in for a week and I couldn't cope, so I had another couple of months off but it did help having your manager's support."*

*The rest of the [organisation] - never mind, you know. You had your manager's support, who dealt with everything about you. It seems to have changed slightly mind now, because HR get involved more now, but because they don't know you directly - I won't say you don't get that sympathetic edge, but they take a harder line, whereas that probably - if that happened to me now - I would have been finished within three months, possibly because of the state I was in. I was so low I wouldn't have been able to fight them and if they had advised that I finish, I probably would have done, whereas then I was able to say 'look, even though I am like I am now, I want to come back and don't worry'. You didn't want that pressure, so he [manager] was dealing with that pressure from above so..."*

I: *"So you think that is the way that HR are tackling things - they are being a bit heavy handed are they?"*

E: *"Well they can be. They have got a business to run. I'm not taking sides, but they don't know you - they just look at your record. They can see that you are not well they can't see when you are going to get better; they are going to say are you sure you are up to this job? And you might say at the moment no, but you are going to come back and it's still going to be stressful - you are going to be tackled more"*

[Focus group]

Therefore, the success of organisational policies was very much dependent on the way that they were implemented. Difficulties relating to effective implementation related to confidentiality of services, practicalities relating to the nature of the job, and the timing of implementation. The effective implementation of policies and procedures was also reliant on engagement and a proactive approach on the part of managers and employees.

## 8.6. QUALITATIVE STUDY DISCUSSION

This study set out to investigate experiences of health and work from the perspectives of employees in general, those with musculoskeletal pain, and managers. The wide-reaching impact of health on work and the importance of Blue Flags in enabling people to work with health problems was evident. However, socio-cultural factors, accessing health-care services, and barriers to implementation of organisational policies (Black Flags) were also important issues for performance as well as absence. The role of managers was key in facilitating work retention and return to work, particularly with regard to implementing organisational policies at a local level. The findings clearly illustrate the complexity of the relationship between health, well-being and work and the need to employ a whole-systems approach to managing the impact of health on work.

Health complaints impacted on work in a number of ways, predominantly in terms of the impact of functional restrictions on ability to attend work, or the type or quantity of work people are able to complete. From the manager's perspective, the impact of health problems on work extended beyond the individual and could affect the whole team.

However, employees are also aware of this and a culture of presenteeism was the norm. Accessing health care services could also impact on attendance; however, the benefits of enabling the effective clinical management of the health problem are likely to outweigh the costs of allowing for short-term absences. Furthermore, psychosocial factors outside of work could influence absence and presenteeism, including financial obligations, juggling the demands of home and work, and being in a caring role. Therefore, it is clear that

ensuring that health complaints are managed as effectively as possible both within and beyond the workplace could have wide-reaching benefits within organisations.

The major themes emerging for challenges and facilitators in working with health problems under the Flags headings are shown in Table 26.

**Table 26. Challenges and facilitators in working with health problems**

Flag	Challenges	Facilitators
Red, Orange and Yellow	Impact on range, quantity, or ability to attend work; consequences for employee, colleagues and managers	Access to timely and appropriate health-care services to manage the condition
Blue	Relationships with managers/colleagues, workload issues, flexibility/control, need for adjustments to work	Support from managers/colleagues, modified or reduced duties, flexible working, reduced hours, graded re-entry to work, redeployment
Black	Implementation of policies/services on a local level, potential negative effects of policies designed to reduce non-legitimate absence for people with genuine need for absence	Awareness of support/options available, communication, support from line managers

The major challenges people discussed in terms of working with health problems and return to work related to the functional impact of their illness on their work or ability to get to work and the implications of this for their colleagues. However, relationships with managers and colleagues were important in allowing people to remain at or return to work. Flexibility and adjustments to work - for which the support of managers was viewed as essential - were viewed as being particularly beneficial in working with health problems.

In terms of the Flags Model framework, the Illness Flexibility Model<sup>19</sup> focuses predominantly on the Blue Flags and touches upon Yellow Flags. The themes emerging in the discussion surrounding the impact of health on absence and attendance mapped on well to the concept of *attendance requirements* (e.g. impact of absence on others at work, responsibilities to others at work, economic loss) of the Illness Flexibility Model<sup>19</sup>. Themes relating to *adjustment latitude* - opportunities to work despite illness, such as moderating work activities - were also extensively discussed. Concerns about taking sickness absence also included not wanting others to think they were not legitimately unwell and for mental health complaints the stigma still attached to these in the workplace was an important

issue. Johansson's extensions to the Illness Flexibility Model described by <sup>157</sup> were also touched upon in this study, but were far less frequently discussed. These included *attendance incentives*, the positively experienced aspects of being at work (e.g. social contact), *absence incentives*, the positively experienced aspects of being absent (e.g. time to care for children), and *absence requirements*, the negative consequences of being at work for the individual, their colleagues or third parties (e.g. not wanting to spread an infection).

The interactions between different layers of the Flags Model were of particular interest in this study. The role of managers in these interactions was key; they were responsible for implementing organisational policies such as flexible working and graded re-entry to work at a local level, signposting individuals towards relevant sources of support (e.g. onsite counselling, OH services), and via the quality of their relationships and communication with employees. The manager's role is central in balancing the needs of the individual and the organisation. Training for managers directly involved in sickness absence management is provided by the organisations. However, this training is not typically provided to the line managers, who are directly involved with the day-to-day management of their employees. Furthermore, training is not provided in managing health-related performance issues. With the employee survey indication that some 86% of participants had at least one common health problem over the last month, the extent of the impact of health on work is clear. Furthermore, this qualitative study highlighted the impact of health on work reaches beyond the individual affecting their colleagues and managers. Providing line managers with the skills, training and support they need to get the best out of their staff and support them when they are affected by health problems could have considerable benefits both in economic terms and for the well-being of employees.

Both the Illness Flexibility Model and the Flags Model were useful in conceptualising the drivers of absence and attendance behaviour in this population. However, neither approach appears to give sufficient weight to the strong socio-cultural influences that can influence behaviour. The moral aspects of work absence - presenteeism and negative attitudes towards 'non-legitimate' sickness absence - were frequently and intensively discussed themes. In line with previous research, discussion around the legitimacy of absence was common and a culture of presenteeism appeared to be the norm <sup>27</sup>. 'Presenteeism' can refer simply to the way that health impacts on work, but also incorporates situations where people attend work when they are too unwell to do so. Though encompassed by the same term, these forms of presenteeism have different implications and need to be managed in different ways.

The concept of the sick role <sup>158</sup> introduces the rights of a sick individual to be exempt from social norms and not be held culpable for their illness, while they have obligations to try to

get well and seek professional help. There have been a number of theoretical and empirical challenges to this concept for failing to address chronic illness, class, gender, ethnicity and age<sup>159</sup>. However, this concept is useful in understanding how the lack of 'proof' of sickness or a willingness to work on through illness can be problematic both from the perspective of employees and employers. These issues may be particularly salient for common musculoskeletal and mental health problems; these are often 'unseen' illnesses and the cause is not always identifiable, so establishing legitimacy may be problematic. This was reflected in the ambiguity surrounding stress in particular. While stress was perceived to be a common problem that affected people's performance, mood and relationships with others there was considerable stigma attached to this complaint, and managers expressed concerns that this could be used as a reason for taking long-term leave with little medical evidence to substantiate the illness.

The stigma attached to mental health complaints was a salient issue in the discussions surrounding work and health, and this in turn could prevent people from disclosing their problem or accessing available services. It was acknowledged by both employees and managers that physical and mental health complaints could co-occur and when this was the case the physical complaint was more likely to be given as a reason for absence. As seen in the employee survey, mental health complaints can impact on work in a different way to more 'physical' health complaints (although these also have an emotional component). Reluctance to disclose mental health complaints can pose a major challenge as this could potentially result in them being under- or mismanaged. Problems with performance, behaviour or relationships with others reported as a result of these complaints could potentially have a very negative effect on productivity and relationships with others, and could potentially be viewed as disciplinary rather than health issues if they are not recognised or disclosed. Communication with employers, colleagues, and health professionals are common challenges associated with employment and mental health complaints, and removing these obstacles to remaining in employment is likely to be key<sup>28</sup>.

Therefore, a broad whole-systems approach is required when considering the impact of health on work and how this could be reduced; addressing the health problem itself via timely access to effective health services, ensuring the psychosocial as well as physical work environment is conducive to well-being and ability to work with health problems, having appropriate policies, procedures and services in place on an organisational level and ensuring these work in practice, providing adequate support and training to line managers, and finally tackling the cultural barriers to improving well-being in work such as the stigma attached to mental health complaints.

## **9. GENERAL DISCUSSION**

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The WiW programme of research set out to implement the recommendations of the WHWR by investigating ways of reducing the impact of health on work in Wales. The project focussed on Merthyr Tydfil, where there was a particular need to investigate new ways of addressing social inequalities in health and well-being. Stage 2 of WiW set out to explore the relationship between health and work in Merthyr Tydfil using a bio-psychosocial approach. The key aims of the project were to improve the understanding of the complex relationship between health and work, and investigate the impact of health on work in terms of absence and performance in major employers in the Merthyr Tydfil area. As part of this work, we sought to identify challenges in and facilitators of remaining or return to work for employees with health problems, scope the current policy context on an organisational, local and national level and explore the potential for developing evidence-based interventions to improve well-being in work, facilitate work retention and return to work. The key findings of Stage 2 and their relevance for theory, policy and practice are discussed in this section.

### **9.1. THE RELATIONSHIP BETWEEN HEALTH, WELL-BEING AND WORK**

The literature reviews highlighted that health problems, including pain, can have a wide-reaching impact economically and in terms of quality of life. Health problems can have a major impact on work in terms of absenteeism and presenteeism, with potentially serious consequences for individuals in terms of loss of work and the resulting impact on well-being, as well as for employers, health services, and the government. Remaining at work or returning as soon as possible can be beneficial to people with health problems; it improves recovery and health outcomes, reduces the negative social, psychological and physical effects of long term sickness absence, and reduces poverty<sup>12</sup>. Although there is a consensus that in general the risks of worklessness outweigh any risks associated with work, jobs can vary widely in their quality and nature<sup>12</sup>. Therefore, in advocating staying at work or returning as soon as possible for people with health problems, there is a responsibility to ensure that work is as positive as possible in terms of health and well-being.

Incapacity for work and disability are complex issues, and social and psychological factors can dramatically influence the impact of symptoms (both with and without disease) on people's lives. The review on the burden of pain highlighted the importance of adopting a bio-psychosocial approach. Given the potential for employing approaches to pain management which tackle psycho-social and behavioural aspects of pain, it is crucial that these issues are given sufficient weight in government priorities and policies, where they

are currently neglected. Following the introduction of the UK Disability Discrimination Act (DDA) in 2005, employers have a legal obligation not to discriminate against employees or potential employees on the grounds of disability and to make reasonable adjustments for them. Fitness for work should not be regarded as an 'all-or-nothing' issue; information on what employees' rights are, and what reasonable and effective adjustments could be made at work, needs to be made available to people with pain, their employers, and their health care providers. There are perceptions among doctors that work can generally be harmful to their patients, but with the exception of some very specific cases, the opposite is true: loss of work can be catastrophic for an individual in terms of finances, social exclusion, and their physical and mental health<sup>11</sup>. Avoiding loss of work through changing perceptions of illness and work, providing better access to condition management services, and getting the right support from health care professionals and employers is a vital component of recovery for individuals, as well as for reducing the economic impact of common health problems.

## **9.2. WORKING WITH HEALTH PROBLEMS IN MERTHYR TYDFIL**

The WiW Stage 2 studies demonstrated that health can have a considerable impact in terms of presenteeism as well as absenteeism. Focusing on absence alone underestimates the impact of health on work and orientates organisational approaches to reducing the impact of work towards managing absence rather than optimising performance. The impact of health on work is a complex issue and a bio-psychosocial approach, such as the Flags Model, is useful in identifying risk factors and potential solutions. The association between subjective health and well-being (Yellow Flags) and the psychosocial work environment (Blue Flags) highlighted the importance of moving beyond the traditional 'health and safety' approach to risk management in the workplace.

Both the cross-sectional and longitudinal analysis of the employee survey revealed that perceptions of work independently contributed to explaining differences in absenteeism and presenteeism when the variance due to general health and well-being had been accounted for. This highlights the need to address these issues in improving well-being in work and in reducing the impact of health on work. The qualitative study mirrored these findings, with health having wide-reaching effects on work and the role of managers was key in providing support and enabling people to access policies and services provided by the organisations. Many of the problems described with regard to working with health problems centred around communication, relationships with managers and colleagues, and issues relating to establishing the legitimacy of health problems. Essentially, the solutions to these challenges are likely to involve improved communication, engaging in a problem solving approach to working with a health problem, and agreeing a realistic and reasonable strategy - both from the point of the employee and the employer - for continuing to work or return to work. Many of the challenges people faced in working with health problems in this



study were potentially modifiable psychosocial issues, indicating significant potential for the development of workplace- and worker-focussed interventions.

### **9.3. REGIONAL CONTEXT**

The WiW Stage 1 Report <sup>2</sup> identified a number of challenges associated with socio-economic deprivation in the Merthyr Tydfil area in relation to health, well-being and work. Despite these challenges, there are a number of opportunities for improving health and well-being in the area including ongoing regeneration and a robust policy context to support initiatives that aim to improve well-being in the area. While strategies for improving well-being in work are much needed in this community, many of the challenges identified within the organisations that took part in this research were consistent with studies carried out in different locations and types of organisation, suggesting that interventions developed in this community would have applicability elsewhere and vice versa.

The qualitative findings suggested that while there may be variation in specific beliefs about the circumstances under which sickness absence is necessary, for the majority of people there is a strong motivation to work given the right support and opportunities. The qualitative study indicated that contrary to a 'culture of worklessness', the dominant social norm for the employees was one of presenteeism, with value being placed on 'good quality' jobs in this region. Nonetheless, there can be medical, psychological, social and economic barriers to work, particularly when high levels of socio-economic deprivation are present <sup>29</sup>, and policies and initiatives aimed at improving well-being in work need to be sensitive to regional context.

In socio-economically deprived communities, job security may be of particular concern with fewer opportunities for suitable work, alongside a relatively high probability of experiencing poor health. This may compound the need to be seen as a 'good' worker willing to work through illness. These social norms are likely to act as a disincentive to taking sickness absence unless it is considered legitimate, which can be particularly problematic for 'unseen' illnesses such as stress and depression. The beneficial effects of continuing or returning to work in terms of improved recovery and avoiding the negative consequences of loss of work for people with common health problems are clear <sup>12</sup>. However, little is known about the effects of presenteeism in the sense of people attending work when they are too unwell to do so in terms of the impact of this on health, work and recovery. Several cases of this type of presenteeism were reported in the qualitative study, where policies designed to reduce unnecessary sickness absence added to the pressures that these individuals encountered. While adequate and appropriate support should be provided for people to work despite health problems, care needs to be taken that initiatives aimed at reducing incapacity for work due to common health problems do not add to the social, moral and economic pressures to 'be well' and a 'good worker' for people who are already unjustly

disadvantaged<sup>117</sup>. In the development of policies and interventions aimed to reduce incapacity for work as a result of common health problems, it is important to consider individual needs and social context, and to ensure that there is a real rather than a theoretical prospect of suitable work in which a person can engage<sup>29</sup>.

## **9.4. LIMITATIONS AND FUTURE RESEARCH**

Limitations to the Stage 2 research included the challenges faced with recruitment of participants, particularly in the lower SES groups who were under-represented in both the qualitative and quantitative studies, despite efforts to engage with these groups. These are common problems in social research, ethical issues and the intensive resources required for recruitment of volunteers are challenges that the research community as a whole need to address if we are to reach those whose voices are rarely heard in research on health and work.

Although beyond the scope of the current project, future research should focus on assessing the generalisability of these findings to other occupational groups, including those working in the private sector and in SMEs. Further research is also required to explore the barriers to work for people in the 'hard to reach' groups, including people who are not working and are therefore further from the labour market. Future research should focus on the development of interventions that aim to address the challenges identified during the Stage 2 research.

The findings of the WiW project are being disseminated in a variety of ways including the preparation of reports to WCfH and WAG, information for lay audiences (available at [www.wellbeinginwork.org](http://www.wellbeinginwork.org)), presentations at national and international meetings and conferences, teaching for a variety of audiences and the preparation of manuscripts for peer reviewed publications. The process of dissemination is ongoing; a summary of presentations and publications prepared by the WiW research group so far is provided in Appendix 1.

## **9.5. IMPLICATIONS FOR PRACTICE**

As part of the WiW Stage 2 research, we sought to identify key occupational problems for individuals and on an organisational level, and to scope the potential for worker-centred and workplace-centred solutions to these. In addition to the WiW research, evidence was gathered from the 'Decade of the Flags' conference held at Keele University in September 2007 (monograph in preparation) and a recent systematic review<sup>135</sup> to identify a number of key problems in organisations in relation to health and well-being in work. These include:

- The impact of health and well-being on absence and performance/productivity

- Presenteeism (defined as being at work with a health problem when one is too unwell to work)
- **Communication\***
- **Role/Function of supervisor\***
- Social climate regarding return to work (RTW) and work retention
- Long work hours and workload and the effect of these on work/life balance
- Lack of control over work
- Lack of participation in decision making
- Guideline and policy implementation/adherence
- Implementation of change.

The problems marked \* are those that were identified as being the most important factors by the Decade of the Flags event *Blue Flags* expert group, and these issues were prominent in the WiW Stage 2 studies.

There is potential to address the problems identified in organisations using Type-I: Worker-centred interventions (psychosocial risk factors - Yellow and Blue Flags), Type-II: Workplace-centred interventions (organisational risk factors - Black Flags), or a combination of these. The role of managers is key both in terms of their direct contact with employees and in implementing organisational policies. Therefore, interventions aimed at line managers could prove particularly fruitful in improving the way in which Yellow and Blue Flags are addressed, as well as facilitating the effective implementation of organisational policies that relate to the Black Flags.

Proposal for change should be '*evidence-based, feasible and attractive*'<sup>160</sup>. Interventions that have been found to be successful in improving psychological health<sup>135</sup> and reducing sickness absence have employed training and organisational approaches to:

1. Increase participation in problem solving and decision making
2. Increase support and feedback
3. Improve communication.

The WiW Stage 2 research indicated that the challenges faced in the participating organisations were similar to those reported elsewhere. Therefore, there is potential for these types of intervention to have considerable benefits for employees in Merthyr Tydfil, particularly if they are developed in a manner that is sensitive to regional, organisational and occupational context.

In terms of reducing inequalities in health and work in this area, occupationally focussed interventions - including those that could be implemented by employers within their

organisations - could have considerable benefits. However, a broad whole-systems approach would be beneficial in optimising the effects of this type of intervention. There is scope to introduce interventions at several different levels that aim to change the culture surrounding health, work and sickness absence. For example, educational initiatives could be carried out within the workplace, with health professionals and/or larger public awareness campaigns, targeting issues such as the stigma attached to mental health complaints that can act as a barrier to accessing support, beliefs that work is a 'risk' to health and well-being, or that sickness absence is the only solution open to people whose health impacts on their work.

For longer-term sustainable change in health, well-being and work, a joined-up approach is likely to be required, allowing provision of additional services and support where it is needed most. This is particularly so in areas of social deprivation, where the demand for pain management and other health care services is likely to be high and opportunities for employment are relatively low. Although ultimately reducing social deprivation and improving health is required in these regions, social and cultural change can take a long time. Therefore, in the short to medium term, improving how pain and other health conditions are managed in these areas - in clinical, occupational and self-management contexts - and ensuring that proposed policies and initiatives are contextually sensitive and appropriate is vital in improving the well-being and prosperity of this community.

## **9.6. IMPLICATIONS FOR POLICY**

The policy context for the WiW project was set out earlier in this report. This indicated that there was a robust policy context for improving the health, well-being and prosperity of Merthyr Tydfil and the Heads of the Valleys region. However, it was evident that pain was not given the priority it required in government policies based on its economic costs and impact on quality of life. Likewise, there was a lack of attention to occupationally focussed interventions to improve the psychosocial work environment.

As part of the government's Health, Work and Well-being strategy, Dame Carol Black carried out a review of the UK working population <sup>161</sup>. The review included a series of consultation events, to which the WiW research group contributed (Cardiff event), sharing the lessons learned through this research. The findings of the WiW research are very much reflected in the key messages in Dame Carol Black's review, indicating that the issues that arose in this research are by no means isolated to Merthyr Tydfil or the south Wales Valleys;

*"For most people, their work is a key determinant of self-worth, family esteem, identity and standing within the community, besides, of course, material progress and a means of social participation and fulfilment.*

*A myriad of factors influence health and well-being, though many are familiar only to those who experience them. Individuals also bear their aspirations, burdens, skills and vulnerabilities to work. So, in turn, the working environment itself can be a major influence on their well-being."*

[p. 4]

Furthermore, the review advocated a bio-psychosocial approach to improving health in work;

*"Running through the Review is a firm belief that we must not reduce the issues around health and work to problems of medicine and medical practice, necessary though they are to the solution. As a clinician, I am continually reminded of the impact of social and environmental factors on health and that when good health can best be restored by the provision of healthcare, the delivery of that healthcare needs to be sensitive to the patient's circumstances in the home, at work and in society."*

[p. 5]

In line with Dame Carol Black's review, the WiW research indicated that a greater emphasis needs to be placed on addressing occupational issues associated with common health problems, in terms of clinical management and government policy and legislation.

On a more local level, it is clear that improving the psychosocial work environment on an individual and organisational level could have significant benefits in the Merthyr Tydfil area. This has potential to improve the health and well-being of employees, and to improve work retention and facilitate return to work. In turn, this could improve the well-being of the workforce and reduce the risks of work loss and entry to benefits, as well as making the workplace a more hospitable environment for people who are further from the labour market when they (re)enter the workforce. Furthermore, there is potential to reduce the impact of health on work performance, thus increasing productivity; in conjunction with reduced absence this could have a significant effect on the functioning and prosperity of organisations. Therefore, prioritising initiatives that aim to improve health and well-being in work could have wide reaching benefits within this region, which is in line with the aims of the Heads of the Valleys *Turning Heads* strategic plan. The WAG *Health Challenge Wales* and *Corporate Health Standard* initiatives could also provide a vehicle for improving well-being in work; currently these adopt more traditional health promotion (e.g. smoking cessation, increasing physical activity) and health and safety approaches, but there is potential for them to encompass initiatives that aim to improve the psychosocial work environment alongside the valuable ongoing work. Therefore, on both a local and national level, there is a robust policy context for improving well-being in work, but re-orientating

these so that they include improvements in Blue and Black Flags would be likely to prove fruitful.

## **9.7. CONCLUSIONS AND RECOMMENDATIONS**

Health problems have wide-reaching effects economically and in terms of quality of life; assessing the impact of health on work in terms of sickness absence alone is likely to considerably under-estimate its effects. There is considerable potential for the development of occupationally focussed interventions to improve well-being in work and facilitate remaining in work with health problems and/or return to work after a period of sickness absence. Table 27 provides a summary of the challenges identified in this research within the context of the Flags Model, and highlights recommendations for addressing these.

Interventions that focus on the psychosocial work environment are likely to be especially important in reducing the impact of health on work, particularly in terms of improving performance and general well-being. However, the potential for introducing worker and workplace focused interventions needs to be considered as part of a broad whole-systems approach; the multi-factorial issue of how health impacts on work is likely to require multi-faceted solutions. Through involving key stakeholders in research and policy development, including local employers, health services, benefits agencies, local and national government agencies, and academic institutions, there is real potential for timely and effective interventions to be introduced to reduce the burden of pain and other common health complaints. Employing a whole-systems approach, working across agencies and involving all the key stakeholders is a challenging task, but it is essential in promoting joined-up thinking, and ensuring that evidence-based policies are put in to practice.

**Table 27. Challenges identified and potential solutions**

Recommendation	Flag	Potential interventions
Addressing the health problem itself via timely access to effective health services.	Yellow	<ul style="list-style-type: none"> <li>Ensuring access to on-site health services is available</li> <li>Ensuring employees can easily access appropriate aids, e.g. back supports or foot stools</li> <li>Implementing health &amp; safety policies nationally developed</li> <li>Facilitating staff access to health services during working hours, i.e. providing time/work cover etc.</li> <li>Sighting health services in appropriate locations, e.g. avoid walking through HR to visit counselling services</li> <li>Develop health promotion initiatives that are accessible to all employees</li> </ul>
Ensuring the psychosocial as well as physical work environment is conducive to well-being & ability to work with health problems.	Blue	<ul style="list-style-type: none"> <li>Arrange regular meetings between managers and employees to discuss practical problems &amp; potential solutions</li> <li>Creating staff rooms/cafes where staff can meet &amp; socialise encourages social support</li> <li>Where possible, upgrade facilities to provide a pleasant working environment</li> <li>Where possible, enable flexible working to enable employees a degree of control over their own time</li> <li>Actively look for solutions to working issues identified by staff, for example modifying work or re-distributing responsibilities</li> </ul>
Having appropriate policies, procedures & services in place on an organisational level & ensuring these work in practice.	Black	<ul style="list-style-type: none"> <li>Consult employees about changes in policies &amp; in how to communicate these policies to the wider staff</li> <li>Provide timely information on changes in policy</li> <li>Ensure employees have access to policy documents</li> <li>Train managers in implementing policies appropriately</li> <li>If necessary, ensure that policies are appropriate for all employees or can be adapted to different job types or health problems</li> </ul>

Cont.

Recommendation	Flag	Potential interventions
Providing adequate support & training to line managers.	Black	<ul style="list-style-type: none"> <li>Develop structured training in communication skills for managers</li> <li>Ensure managers are aware of policies &amp; any updates &amp; that they communicate these to staff</li> <li>Training in giving feedback &amp; in conducting appraisals</li> <li>Ensure appraisals are carried out &amp; outcomes are followed-up</li> </ul>
Tackling the cultural barriers to improving well-being in work, such as the stigma attached to mental health complaints.	Black - system (may be Blue if done in house)	<p>In-House</p> <ul style="list-style-type: none"> <li>Providing all employees with information about health or access to this information, either by using onsite occupational health services or via online information systems</li> </ul> <p>System</p> <ul style="list-style-type: none"> <li>Encouraging the organisation/employees to participate in community action/charities associated with specific health conditions to raise general awareness</li> </ul>
Ensuring that government policies reflect the impact that pain & other health problems have on work, giving these issues the priority they require in light of their economic impact and effect on quality of life.	Black - system	<ul style="list-style-type: none"> <li>Be aware of Government policies/initiatives surrounding health &amp; work and actively participate in any consultation process</li> </ul>
Considering socio-economic & regional context in the development of policies & interventions.	Black - system (Blue if in-house)	<p>In-House</p> <ul style="list-style-type: none"> <li>Consider the hours employees are expected to work in relation to public transport links (particularly in regions where there is low car ownership)</li> <li>Make use of grants and incentives to promote better health &amp; lifestyle choices of staff or to develop a lift-share scheme for example</li> </ul> <p>System</p> <ul style="list-style-type: none"> <li>Be aware of local Government policies &amp; actively participate in any consultation process to highlight the needs of employees</li> </ul>



## APPENDIX 1. DISSEMINATION OF FINDINGS

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### Reports & articles

- Phillips, C. J., Main, C. J., Buck, R., Aylward, M., Wynne-Jones, G., Farr, A. (in press). 'Prioritising pain in policy making: the need for a whole systems perspective', Health Policy.
- Buck, R, Phillips, CJ, Main, CJ, Varnava, A, Button, L, Wynne-Jones, G, Cooper, L, Webb, K. L. Well-being in Work Stage 2: 12-Month Interim Report. Report to the Wales Centre for Health, July 2007.
- Buck, R, Phillips, CJ, Main, CJ, Varnava, A, Button, L, Webb, K, Wynne-Jones, G, Cooper, L. Well-being in Work Stage 2: 6-Month Interim Report. Report to the Wales Centre for Health, January 2007.
- Buck R, Phillips CJ, Main CJ, Barnes M, Aylward M, and Waddell G. 'Conditionality in Context: Incapacity Benefit and Social Deprivation in Merthyr Tydfil', Report to MP for Merthyr Tydfil and Rhymney, June 2006. Available at <http://www.epolitix.com/>
- Phillips, CJ, Main, CJ, Buck, R, Button, L, Farr, A, Havard, L, Brown, G. 'Profiling the community in Merthyr Tydfil: Problems, challenges, and opportunities'. Well-being in Work Partnership Phase 1: Final Report, March 2006. Available at <http://www.wellbeinginwork.org>

### Presentations

- Buck, R. *Common health problems in the community and at work*. Presentation to Lieutenant General Lillywhite, Surgeon General to the MOD, Cardiff, 25th of March 2008.
- Varnava, A. *'Health and well-being in work'*, Legal and General & Cardiff University Medical Underwriters Training, Cardiff, 6th of February 2008.
- Varnava, A, Wynne-Jones, G, Buck, R, Main, C. J. & Phillips, C. J. *'Working with common health problems: effects of specific symptoms on absence and performance'*, British Psychological Society Division of Health Psychology Annual Conference, Nottingham, September 12-14, 2007.
- Cooper, L, Button, L, Webb, K. L., Phillips, C. J., Buck, R, Main, C. J. *'What happens at work when you're unwell? A qualitative investigation'*, British Psychological Society Division of Health Psychology Annual Conference, Nottingham, September 12-14, 2007.
- Webb, KL, Buck, R, Main, C. J., Phillips, C. J., Varnava, A., Button, L., Cooper, L. & Wynne-Jones, G. *'Health, well-being and work in Merthyr Tydfil: an interdisciplinary approach'*, European Health Psychology Society Annual Conference, Maastricht, August 14-18, 2007.

- Buck, R. '*How well do you feel? A bio-psychosocial approach to understanding health and well-being.*' Internal seminar series, School of Psychology, Cardiff University, April 13th 2007.
- Buck, R. '*Common health problems in the community and at work.*' Presentation to the Health and Safety Executive, Unum Centre for Psychosocial and Disability Research, Cardiff University, 27th of March 2007.
- Varnava, A & Webb, K. '*Well-being in work.*' Presentation to international visitors from industry at Unum Centre for Psychosocial and Disability Research, Cardiff University, 16th of March 2007.
- Buck, R. '*Well-being in work.*' Presentation to Lord McKenzie, Minister for Work and Pensions, Unum Centre for Psychosocial and Disability Research, Cardiff University, 9th of March 2007.
- Buck, R. '*Well-being in work.*' Invited presentation at meeting for stakeholders in the Health, Work and Well-being Strategy, Department of Health, London, 2nd of March 2007.
- Phillips, C. '*Well-being in work.*' CHS meeting, 2nd of February, 2007.
- Phillips, C. '*Well-being in work - setting the context.*' Launch of the WiW project, Civic Centre, Merthyr Tydfil, 30th of January 2007.
- Main, C. '*Well-being in Work: Addressing the influence of health and well-being on work.*' Launch of the WiW project, Civic Centre, Merthyr Tydfil, 30th of January 2007.
- Buck, R. '*The Well-being in work partnership.*' Presentation to the Wales Centre for Health Executive Board, Nantgarw, 30th of October 2006.

## APPENDIX 2. EMPLOYEE SURVEY: 6-MONTH FOLLOW-UP

### DEMOGRAPHICS AND WORK CHARACTERISTICS

	All data	Online	Paper
<b>Demographics</b>			
Age	41.49 (SD:10.61)	40.82 (SD: 10.38)	46.71 (SD: 11.02)
Gender	73% female	73% female	71% female
Ethnic group	>95% White	>95% White	>95% White
Education (University degree)	169 (29%)	96 (31%)	8 (21%)
Marital status			
• Married	254 (74%)	227 (74%)	27 (73%)
• Single	62 (18%)	55 (18%)	7 (19%)
<b>Characteristics &amp; Descriptions of Work</b>			
Type of contract (Permanent)	311 (90%)	276 (89%)	35 (92%)
Supervision of other employees	177 (52%)	160 (53%)	17 (45%)
Type of work			
• Modern professional	143 (42%)	133 (44%)	10 (30%)
• Clerical and intermediate	93 (28%)	86 (28%)	7 (21%)
• Senior managers/administrators	36 (11%)	32 (11%)	4 (12%)
• Technical or craft	7 (2%)	5 (2%)	2 (6%)
• Semi-routine manual & service	3 (1%)	2 (1%)	1 (3%)
• Routine manual & service	5 (2%)	0	5 (15%)
• Middle or junior managers	30 (9%)	26 (9%)	4 (12%)
• Traditional professional	21 (6%)	21 (7%)	0
NS-SEC			
• Managerial & professional	232 (71%)	213 (72%)	19 (58%)
• Intermediate occupations	82 (25%)	76 (26%)	6 (18%)
• Lower supervisory & technical	9 (3%)	6 (2%)	3 (9%)
• Semi routine & routine	6 (2%)	1 (0.3%)	5 (15%)
Contracted hours (31-40 hours)	290 (84%)	269 (87%)	21 (58%)
Extra hours			
• Never	58 (17%)	52 (17%)	6 (16%)
• Occasionally	135 (39%)	125 (41%)	10 (26%)
• Often	74 (21%)	60 (20%)	14 (37%)
• Very often	79 (23%)	71 (23%)	8 (21%)
How many extra hours	8.39 (SD: 11.80)	8.32 (SD: 12.28)	8.90 (SD: 6.68)

## APPENDIX 3. EMPLOYEE SURVEY: 12-MONTH FOLLOW-UP DEMOGRAPHICS AND WORK CHARACTERISTICS

	All data	Online	Paper
<b>Demographics</b>			
Age	40.96 (SD: 10.61)	40.26 (SD: 10.41)	46.33 (SD:10.81)
Gender	74% female	75%	67% female
Ethnic group	>95% white	>95% white	>95% white
Education (University degree)	85 (31%)	78 (32%)	7 (23%)
Marital status			
• Married	195 (72%)	173 (72%)	22 (76%)
• Single	50 (19%)	46 (19%)	4 (14%)
<b>Characteristics &amp; Descriptions of Work</b>			
Type of contract (Permanent)	243 (89%)	215 (89%)	28 (93%)
Supervision of other employees	142 (53%)	127 (53%)	15 (50%)
Type of work			
• Modern professional	108 (40%)	100 (42%)	8 (29%)
• Clerical and intermediate	77 (29%)	73 (30%)	4 (14%)
• Senior managers/administrators	27 (10%)	24 (10%)	3 (11%)
• Technical or craft	5 (2%)	3 (1%)	2 (7%)
• Semi-routine manual & service	4 (2%)	2 (1%)	2 (7%)
• Routine manual & service	6 (2%)	0	6 (21%)
• Middle or junior managers	24 (9%)	21 (9%)	3 (11%)
• Traditional professional	18 (7%)	18 (8%)	0
NS-SEC			
• Managerial & professional	184 (69%)	170 (71%)	14 (50%)
• Intermediate occupations	67 (25%)	63 (27%)	4 (14%)
• Lower supervisory & technical	8 (3%)	4 (2%)	4 (14%)
• Semi routine & routine	7 (3%)	1 (0.4%)	6 (21%)
Contracted hours (31-40 hours)	225 (83%)	209 (86%)	16 (57%)
Extra hours			
• Never	49 (18%)	44 (18%)	5 (17%)
• Occasionally	117 (43%)	108 (44%)	9 (30%)
• Often	47 (17%)	36 (15%)	11 (37%)
• Very often	60 (22%)	55 (23%)	5 (17%)
How many extra hours	8.28 (SD: 11.36)	8.27 (SD: 11.78)	8.30 (SD: 6.67)

## APPENDIX 4. FOCUS GROUP INTERVIEW SCHEDULE

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**Introduction:** “Thank you for coming along today. We’re interested in finding out more about health and work. The information you give will be used to find ways of improving health in the workplace and the way that health conditions are managed at work...”

### Section 1: Ice breaker

*Vignettes designed to get people thinking around the issues of health and work (participants in pairs).*

“To start off with, we’re going to do an exercise just to get us thinking about the types of issues we’ll be talking about today. Please look at these cards. What do you think about each of these scenarios?”

1. *A woman in her 30s is having trouble sleeping. She works with computers, mainly doing data entry.*
2. *A man in his 40s has pain in his lower back. In his job, he operates mechanical equipment.*
3. *A woman in her 50s has a tight chest and a sore throat. She works as a receptionist.*

Prompts:            Do you think anything is wrong with them?  
                          What should they do about it?  
                          Would their health affect their work?  
                          Do you think they should take time off?

### Section 2: Health and work

General:

- What kind of health conditions do most people get at some point in their lives?
- Do you believe any of these conditions would have an affect how well people can do their normal work?
- If so, how?
  - What kind of things would the conditions stop you from doing as well as usual? (e.g. back pain, depression, stress)
  - What sort of things would the conditions stop you from doing altogether?
  - Why/how would they influence your ability to work? I.e. what is it about them? (These could be symptoms/ subjective/ practical/ functional/ cognitive/ motivational/ stigma/ social barriers to optimal performance)
- For which of these conditions would you need to take time off work?

- How long would you need to take off?
  - How would you decide this?
- How would you decide when you would go back to work?
- Does work have an effect on your health?
  - Prompt for positive as well as negative
- Apart from your health, what other things do you think may influence how well you do your job?

Personal experiences:

"We've talked about health conditions in general and how you think they influence the way people are able to work. We would now like to move on to talk about your own experiences. If you would rather talk about someone else's experience, that's fine."

- Can you think of the last time you have needed to take time off work?
  - (if not, this question could refer to examples of friends/family)
  - For how long were you off work?
  - What effect did it have on:
    - everyday life
    - at home
    - at work
- What did you do about the condition?
  - See health professionals?
  - Any treatments/self-management?
- Did you talk to someone at work about it? Boss, colleagues, OH, HR?
- What did your employer do about it? Any support? Made any adjustments?
- Did you experience any difficulties at work because of the condition?
- Could your situation have been managed better at work? If so, how?
- What were the reasons for you to return to work?
- Do you feel that you were physically/mentally ready to return to work when you did?

Knowledge of procedures:

- Are there any problems returning back to work after being off sick?
- How long can you be off work sick without requiring a doctor's certificate?
- How long can you take off work for illness before you lose pay?
- Whom would you contact first at work in case of an illness?
- Does your employer have an Occupational Health Service?
  - Is this service available to you?
  - Have you used this service?

### **Section 3: Ranking exercise**

'To finish off, we're just going to do an exercise to look at how some of the conditions we've talked about could affect your work....'

*Names of conditions provided on cards based on those discussed in the groups.*

- Please put these conditions in order of how much they would affect your work (most to least)?
- Please put these conditions in order of which would be most likely to make you take time off work (most to least)?
- Please put these conditions in order of how much time you would need to take off work (most to least)

### **Section 4: Summary**

- Feedback previous points contributed by participants to group for validation
- Summary question: Is there anything else you would like to share with us regarding your opinions of the effect of illness on work?

Thank you for your time!

## APPENDIX 5. QUALITATIVE CODING FRAMEWORK AND KEY THEMES

Theme	Category	Sub-category A	Sub-category B	Sub-category C
1. Impact of health on work				
	Performance			
		Immediate work environment		
			Physical functioning	
			Psycho-social functioning	
			Need for change in work situation	
			Impact on colleagues	
				Workload / duties
				Shifts / hours
				Vacation / annual leave
				Sick-leave
		Individual		
			Finances	
			Career progression	
			Psychological well-being	
		Organisational		
		Socio-cultural		
	Absence	(as for performance, above)		
	Moderators			
		Immediate work environment		
			Objective characteristics of work	
				Managerial work
				Clerical/desk based work
				Manual work
				Public service occupations
				Physical demands
				Work hours
				Flexible working/home working
				Shift working
				Regular breaks
			Perceptions of work	



			Job satisfaction Relationship with manager Relationship with colleagues Workload Social pressure
	Individual	Personality Age Gender	
	Organisation	Sickness absence procedures Return to work and work retention procedures	
	Socio-cultural	Family	Bereavement Marriage problems Child issues Other relatives
<b>2. Impact of work on health</b>			
	Immediate work environment	Objective characteristics of work (for sub-categories, see 'moderators' in Theme 1) Perceptions of work (for sub-categories, see 'moderators' in Theme 1)	
	Individual	Personality Age Gender	
	Organisation		
	Socio-cultural		
<b>3. Return to work and work retention</b>			
	Immediate work environment	Objective characteristics of work (for sub-categories, see 'moderators' in Theme 1) Modify duties/job Change in or flexible hours	
		Perceptions of work (for sub-categories, see 'moderators' in Theme 1)	
	Individual	Economic factors	

Organisation	Skills	
	Work ethic	
	<b>Role of managers</b>	
		Balancing the needs of the organisation vs. staff Recognising changes in staff Active role in return to work/work retention
Socio-cultural	Procedures for reporting absence	
	Re-deployment	
		Positive Negative Search for new job
	Sick-leave interviews	
	Enforced sick-leave	
	Flexible working policies	
Socio-cultural	Knowledge of procedures and services	
	Perceptions of others	

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## REFERENCES

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1. Main CJ, Phillips CJ, Farrer A, Thomas AJ. Health and work: minimising the problems of musculoskeletal pain: Report of the Wales Health Work Partnership to the Welsh Assembly Government., 2004.
2. Phillips C, Main C, Buck R, Button L, Farr A, Havard L, et al. Profiling the community in Merthyr Tydfil: Problems, challenges, and opportunities. *Well-being in Work Phase 1, final report to the Wales Centre for Health*, 2006.
3. DWP. A new deal for welfare: empowering people to work. Available at <http://www.dwp.gov.uk/welfare-reform/foreword.asp>, 2006.
4. DWP. Health and Safety Executive and Department of Health. Health, work and well-being: caring for our future. Available at [http://www.dwp.gov.uk/publications/dwp/2005/health\\_and\\_wellbeing.pdf](http://www.dwp.gov.uk/publications/dwp/2005/health_and_wellbeing.pdf), 2005.
5. HSE. *Securing health together: a long-term occupational health strategy for England, Scotland and Wales*. London: Health and Safety Executive, 2000.
6. Maniadakis N, Gray A. The economic burden of back pain in the UK. *Pain* 2000;84(1):95-103.
7. Belsey J. Primary care workload in the management of chronic pain: a retrospective cohort study using GP databases to identify resource implications for U.K. primary care. *Journal of Medical Economics* 2002;5:39-52.
8. Eccleston C, Yorke L, Morley S, Williams AC, Mastroiannopoulou K. Psychological therapies for the management of chronic and recurrent pain in children and adolescents. *Cochrane Database of Systematic Reviews* 2003(1):CD003968.
9. Karjalainen K, Malmivaara A, van Tulder M, Roine R, Jauhiainen M, Hurri H, et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. *Cochrane Database of Systematic Reviews* 2003(2):CD002193.
10. Karjalainen K, Malmivaara A, van Tulder M, Roine R, Jauhiainen M, Hurri H, et al. Multidisciplinary biopsychosocial rehabilitation for neck and shoulder pain among working age adults. *Cochrane Database of Systematic Reviews* 2003(2):CD002194.
11. Waddell G, Aylward M. *The scientific and conceptual basis of incapacity benefits*. London: TSO, 2005.
12. Waddell G, Burton AK. *Is work good for your health and well-being?* London: TSO, 2006.
13. Wang JL, Lesage A, Schmitz N, Drapeau A. The relationship between work stress and mental disorders in men and women: findings from a population-based study. *Journal of Epidemiology and Community Health* 2008;62:42-47.
14. Barham C, Begum N. Sick leave from work in the UK. Labour market trends. London: Office for National Statistics, 2005.

15. Barham C, Leonard J. Trends and sources of data on sickness absence. Labour market trends. London: Office for National Statistics, 2002.
16. Stewart WF, Ricci JA, Chee E, Morganstein D, Lipton R. Lost productive time and cost due to common pain conditions in the US workforce. *JAMA* 2003;290:2443-54.
17. Van Leeuwen MT, Blyth FM, March LM, Nicholas MK, Cousins MJ. Chronic pain and reduced work effectiveness: the hidden cost to Australian employers. *European Journal of Pain* 2006;10:161-166.
18. Brouwer WB, van Exel NJ, Koopmanschap MA, Rutten FF. Productivity costs before and after absence from work: as important as common? *Health Policy* 2002;61(2):173-187.
19. Johansson G, Lundberg I. Adjustment latitude and attendance requirements as determinants of sickness absence or attendance. Empirical tests of the illness flexibility model. *Social Science & Medicine* 2004;58(10):1857-1868.
20. Main CJ, Glozier N, Wright I. Validity of the HSE stress tool: an investigation within four organizations by the Corporate Health and Performance Group. *Occupational Medicine* 2005;55:208-214.
21. Main CJ, Watson PJ, Sullivan MJL. *Pain Management: Practical Applications of the Biopsychosocial Perspective in Clinical and Occupational Settings*: Churchill Livingstone, 2007.
22. Eriksen HR, Ihlebaek C. Subjective health complaints. *Scandinavian Journal of Psychology* 2002;43(2):101-103.
23. Eriksen HR, Svendsrod R, Ursin G, Ursin H. Prevalence of subjective health complaints in the Nordic European countries in 1993. *European Journal of Public Health* 1998;8(4):294-298.
24. Ihlebaek C, Brage S, Eriksen HR. Health complaints and sickness absence in Norway, 1996-2003. *Occupational Medicine-Oxford* 2007;57(1):43-49.
25. Kroenke K, and Price, R.K. Symptoms in the Community: Prevalence, Classification, and Psychiatric Comorbidity. *Archives of Internal Medicine* 1993;153:2474-2480.
26. Kroenke K, Spitzer, R.L., Williams, J.B.W., Linzer, M., Hahn, S.R., deGruy, F.V., & Brody, D. Physical Symptoms in Primary Care: Predictors of Psychiatric Disorders and Functional Impairment. *Archives of Family Medicine* 1994;3:774-779.
27. Dew K, Keefe V, Small K. Choosing to work when sick: workplace presenteeism. *Social Science and Medicine* 2005;60(10):2273-2282.
28. Grove B, Secker J, Seebohm P. *New thinking about mental health and employment*. Oxford: Radcliffe Publishing, 2005.
29. Buck R, Phillips C, Main C, Barnes M, Aylward M, Waddell G. Conditionality in context: Incapacity benefit and social deprivation in Merthyr Tydfil. *Report to MP for Merthyr Tydfil and Rhymney*, [www.epolitix.com](http://www.epolitix.com), 2006.
30. Graham H. *Unequal lives: health and socio-economic inequalities*. Buckingham: Open University Press, 2007.

31. Woods L, Rachet B, Riga M, Stone N, Shah A, Coleman P. Geographical variation in life expectancy at birth in England and Wales is largely explained by deprivation. *Journal of Epidemiology and Community Health* 2005;59(115-120).
32. Wheeler B, Shaw M, Mitchell R, Dorling D. *The relationship between poverty, affluence and area*. York: Joseph Rowntree Foundation, 2005.
33. Kenway P, Parsons N, Carr J, Palmer G. Monitoring poverty and social exclusion in Wales 2005. York: Joseph Rowntree Foundation, 2005.
34. Fone D, Dunstan F, Williams G, Lloyd K, Palmer S. Places, people and mental health: A multilevel analysis of economic inactivity. *Social Science & Medicine* 2007;64(3):633-645.
35. Lewis G, Slogget A. Suicide, deprivation and unemployment: record linkage study. *British Medical Journal* 1998;817:1288-6.
36. WAG. Welsh Health Survey. Welsh Assembly Government. Available at <http://new.wales.gov.uk/topics/statistics/publications/publication-archive/health-survey2003-04/?lang=en>, 2003/04.
37. DWP. Statistical summary. Available at [http://www.dwp.gov.uk/asd/statistical\\_summaries.asp](http://www.dwp.gov.uk/asd/statistical_summaries.asp). 2006.
38. WAG. Well Being in Wales: a consultation document. Cardiff Welsh Assembly Government, 2002.
39. WAG. Wales: a better country. Available at [http://new.wales.gov.uk/topics/health/publications/health/strategies/wales\\_a\\_better\\_country?lang=en](http://new.wales.gov.uk/topics/health/publications/health/strategies/wales_a_better_country?lang=en), 2003.
40. WAG. Wales: a vibrant economy. Available at <http://new.wales.gov.uk/about/strategy/strategypublications/strategypubs/1711511?lang=en>, 2005.
41. Wanless Report. Review of health and social care in Wales. Available at [http://new.wales.gov.uk/about/departments/dhss/publications/health\\_pub\\_index/reports/wanless?lang=en](http://new.wales.gov.uk/about/departments/dhss/publications/health_pub_index/reports/wanless?lang=en), 2003.
42. WAG. Improving health in Wales: a plan for the NHS with its partners. 2001.
43. WAG. Designed for life. Available at <http://new.wales.gov.uk/news/archivepress/healthpress/healthpress2005/708578/?lang=en>, 2005.
44. WAG. Health Challenge Wales. Available at <http://new.wales.gov.uk/subsite/healthchallenge/?lang=en>, 2005.
45. WAG. Chief Medical Officer's report: Health Status of Wales 2004-2005. Available at <http://new.wales.gov.uk/topics/health/ocmo/communications/cmo-reports/cmo-report-05?lang=en>, 2005.
46. Corporate Health Standard Scheme. Available at <http://wales.gov.uk/subsite/healthchallenge/organisations/corporate-health-standard/?lang=en>. 2007.

47. WAG. Turning Heads: a strategy for the heads of the Valleys 2020. Available at <http://wales.gov.uk/topics/businessandeconomy/property/HofV/hofv-about/?lang=en>, 2007.
48. DoH. Contracts for GPs. Available at <http://www.dh.gov.uk/en/Healthcare/Primarycare/Primarycarecontracting/index.htm>, 2003.
49. Phillips CJ, Main CJ, Buck R, Aylward M, Wynne-Jones G, Farr A. Prioritising pain in policy making: the need for a whole systems perspective. *Health Policy* in press.
50. Latham J, Davis BD. The socioeconomic impact of chronic pain. *Disability and Rehabilitation* 1994;16(1):39-44.
51. Rudy TE, Kerns RD, Turk DC. Chronic pain and depression: toward a cognitive-behavioural mediation model. *Pain* 1988;35:129-140.
52. Elliott AM, Smith BH, Penny KI, Smith WC, Chambers WA. The epidemiology of chronic pain in the community. *Lancet* 1999;354(9186):1248-52.
53. Elliott AM, Smith BH, Hannaford PC, Smith WC, Chambers WA. The course of chronic pain in the community: results of a 4-year follow-up study. *Pain* 2002;99(1-2):299-307.
54. Bolten W, Kempe-Waibel A, Pforringer W. Analysis of the cost of illness in backache. *Medizinische Klinik (Munich)* 1998;93(6):388-93.
55. Koes BW, van Tulder MW, Thomas S. Diagnosis and treatment of low back pain. *British Medical Journal* 2006;332(7555):1430-4.
56. Kendall NAS, Linton SJ, Main CJ. Guide to assessing psychosocial yellow flags in acute low back pain: risk factors for long term disability and work loss. Wellington, NZ: Accident Rehabilitation and Compensation Insurance Corporation of New Zealand and the National Health Committee, 1997.
57. *Association of anaesthetists of Great Britain and Ireland and the Pain Society*. London: Provision of Pain Services, 1997.
58. CSAG. *Clinical Standards Advisory Group. Services for patients with pain*. London: HMSO, 2000.
59. Fishman SM, Gallagher RM, Carr DB, Sullivan LW. The case for pain medicine. *Pain Medicine* 2004;5(3):281-6.
60. Cousins MJ, Brennan F, Carr DB. Pain relief: a universal human right. *Pain* 2004;112(1-2):1-4.
61. Woolf AD, Zeidler H, Haglund U, Carr AJ, Chaussade S, Cucinotta D, et al. Musculoskeletal pain in Europe: its impact and a comparison of population and medical perceptions of treatment in eight European countries. *Annals of the Rheumatic Diseases* 2004;63(4):342-7.
62. Eriksen J, Jensen MK, Sjogren P, Ekholm O, Rasmussen NK. Epidemiology of chronic non-malignant pain in Denmark. *Pain* 2003;106(3):221-8.



63. Verbeek J, Sengers MJ, Riemens L, Haafkens J. Patient expectations of treatment for back pain: a systematic review of qualitative and quantitative studies. *Spine* 2004;29(20):2309-18.
64. Breen A, Austin H, Campion-Smith C, Carr E, Mann E. "You feel so hopeless": a qualitative study of GP management of acute back pain. *European Journal of Pain* 2007;11(1):21-9.
65. Cohen D, Rollnick S, Smail S. Communication, stress and distress: evolution of an individual support programme for medical students and doctors. *Med Educ* 2005;39:476-81.
66. Longo MF, Cohen DR, Hood K, Edwards A, Robling M, Elwyn G, et al. Involving patients in primary care consultations: assessing preferences using discrete choice experiments. *British Journal of General Practice* 2006;56(522):35-42.
67. Ricci JA, Stewart WF, Chee E, Leotta C, Foley K, Hochberg MC. Pain exacerbation as a major source of lost productive time in US workers with arthritis. *Arthritis and Rheumatism* 2005;53(5):673-81.
68. Woolf AD, Pfleger B. Burden of major musculoskeletal conditions. *Bulletin of the World Health Organization* 2003;81(9):646-56.
69. Frank AO, Chamberlain MA. Keeping our patients at work: implications for the management of those with rheumatoid arthritis and musculoskeletal conditions. *Rheumatology* 2001;40(11):1201-5.
70. The impact of arthritis: arthritis care factsheet, 2007.
71. Ashburn M, Staats P. Management of chronic pain. *Lancet* 1999;353:1865-1869.
72. Eccleston C, Crombez G. Pain demands attention: A cognitive-affective model of the interruptive function of pain. *Psychological Bulletin* 1999;125(3):356-366.
73. Hemp P. Presenteeism: at work--but out of it. *Harv Bus Rev* 2004;82(155):49-58.
74. Phillips CJ. *Health Economics: an introduction for health professionals*. Oxford: Blackwells, 2005.
75. Smith I. Cost considerations in the use of anaesthetic drugs. *Pharmacoeconomics* 2001;19(5 Pt 1):469-81.
76. Gilson AM, Maurer MA, Joranson DE. State policy affecting pain management: recent improvements and the positive impact of regulatory health policies. *Health Policy* 2005;74(2):192-204.
77. Phillips CJ. The real cost of pain management. *Anaesthesia* 2001;56(11):1031-3.
78. Peat GM, Moores L, Goldingay S, Hunter M. Pain management program follow-ups. a national survey of current practice in the United Kingdom. *Journal of Pain and Symptom Management* 2001;21(3):218-26.
79. Butler RJ, Johnson WG, Baldwin ML. Managing work disability: why first return to work is not a measure of success. *Indus Labor Rev* 1995;48:452-469.
80. BSRM. *Vocational rehabilitation - the way forward: report of a working party*. London: British Society of Rehabilitation Medicine, 2000.

81. McQuay HJ, Moore RA. *An evidence based resource for pain relief*. Oxford: Oxford University Press, 1998.
82. Gureje O, Von Korff M, Simon GE, Gater R. Persistent pain and well-being: a World Health Organization Study in Primary Care. *Jama* 1998;280(2):147-51.
83. Schwartz L, Slater MA, Birchler GR. The role of pain behaviors in the modulation of marital conflict in chronic pain couples. *Pain* 1996;65(2-3):227-33.
84. Schwartz L, Slater MA, Birchler GR, Atkinson JH. Depression in spouses of chronic pain patients: the role of patient pain and anger, and marital satisfaction. *Pain* 1991;44(1):61-7.
85. Kemler MA, Furnee CA. The impact of chronic pain on life in the household. *Journal of Pain and Symptom Management* 2002;23(5):433-41.
86. Sprangers MA, de Regt EB, Andries F, van Agt HM, Bijl RV, de Boer JB, et al. Which chronic conditions are associated with better or poorer quality of life? *Journal of Clinical Epidemiology* 2000;53(9):895-907.
87. Reginster JY. The prevalence and burden of arthritis. *Rheumatology* 2002;41 Supp 1:3-6.
88. Becker N, Thomsens AB, Olson AK, Sjogren P, Bech P, Eriksen J. Pain epidemiology and health related quality of life in chronic non-malignant pain patients referred to a Danish multidisciplinary pain center. *Pain* 1997;73:393-400.
89. Kerr S, Fairbrother G, Crawford M, Hogg M, Fairbrother D, Khor KE. Patient characteristics and quality of life among a sample of Australian chronic pain clinic attendees. *Internal Medicine Journal* 2004;34(7):403-9.
90. Goossens ME, Evers SM, Vlaeyen JW, Rutten-van Molken MP, van der Linden SM. Principles of economic evaluation for interventions of chronic musculoskeletal pain. *European Journal of Pain* 1999;3(4):343-353.
91. Moore A, Edwards J, Barden J, McQuay HJ. *Bandolier's little book of pain*. Oxford: Oxford University Press, 2003.
92. Guzman J, Esmail R, Karjalainen K, Malmivaara A, Irvin E, Bombardier C. Multidisciplinary rehabilitation for chronic low back pain: systematic review. *British Medical Journal* 2001;322(7301):1511-6.
93. Kerns R, Rosenberg R. Predicting responses to self-management treatments for chronic pain: Application of the pain stages of change model. *Pain* 2000;84:49-55.
94. Morley S, Eccleston C, Williams A. Systematic review and meta-analysis of randomized controlled trials of cognitive behaviour therapy and behaviour therapy for chronic pain in adults, excluding headache. *Pain* 1999;80:1-13.
95. Spiegel D, Bloom JR. Group therapy and hypnosis reduce metastatic breast carcinoma pain. *Psychosomatic Medicine* 1983;45:333-339.
96. Syrjala KL, Cummings C, Donaldson GW. Hypnosis or cognitive behavioural training for the reduction of pain and nausea during cancer treatment: a controlled clinical trial. *Pain* 1992;48:137-146.

97. Syrjala K, Chapko M. Evidence for a biopsychosocial model of cancer treatment-related pain. *Pain* 1995;61:69-79.
98. Syrjala K, Donaldson G, Davies M, Kippes M, Carr J. Relaxation and imagery and cognitive-behavioural training reduce pain during cancer treatment: a controlled clinical trial. *Pain* 1995;63:189-198.
99. Loeser JD. Economic implications of pain management. . *Acta Anaesthesiol Scand* 1999;43:957-59.
100. Buchbinder R, Jolley D, Wyatt M. Effects of a Media Campaign on Back Pain Beliefs and Its Potential Influence on Management of Low Back Pain in General Practice. *Spine* 2001;26(23):2535-2542.
101. Waddell G. Preventing incapacity in people with musculoskeletal disorders. *British Medical Bulletin* 2006;77-78:55-69.
102. Hopton JL, Dlugolecka M. Patients' perceptions of need for primary health care services: useful for priority setting? *British Medical Journal* 1995;310(6989):1237-40.
103. AC. *Anaesthesia under examination*. London: Audit Commission, 1997.
104. McQuay HJ, Moore RA, Eccleston C, Morley S, Williams AC. Systematic review of outpatient services for chronic pain control. *Health Technol Assess* 1997;1(6):i-iv, 1-135.
105. Phillips CJ, Edwards RT. The economics of health in Wales. *Welsh Economic Review* 2002;14:26-30.
106. CIPD. Annual survey report 2006: absence management. London: Chartered Institute of Personnel and Development, 2006.
107. Nguyen TH, Randolph DC. Nonspecific low back pain and return to work. *American Family Physician* 2007;76:1497-1502.
108. Lerner DJ, Amick BC, Malspeis S, Rogers WH. A national survey of health-related work limitations among employed persons in the United States. *Disabil Rehabil* 2000;22(5):225-32.
109. Koopmanschap M, Burdorf A, Jacob K, Meerding WJ, Brouwer W, Severens H. Measuring productivity changes in economic evaluation: setting the research agenda. *Pharmacoeconomics* 2005;23(1):47-54.
110. Burton WN, Conti DJ, Chen CY, Schultz AB, Edington DW. The economic burden of loss productivity due to migraine headache: a specific worksite analysis. *Journal of Occupational and Environmental Medicine* 2002;44(6):523-529.
111. Caverley N, Cunningham J, MacGregor J. Sickness presenteeism, sickness absenteeism, and health following restructuring in a public service organization *Journal of Management Studies* 2007;44(2):304-319.
112. Schultz A, Edington D. Employee health and presenteeism: A systematic review *Journal of Occupational Rehabilitation* 2007;17(3):547-579.
113. Blaxter M. *Health*. Cambridge: Polity Press, 2004.

114. Nettleton S. 'I just want permission to be ill': towards a sociology of medically unexplained symptoms. *Social Science and Medicine* 2006;62:1167-1178.
115. Pinder R. Bringing back the body without the blame? The experience of ill and disabled people at work. *Sociology of Health & Illness* 1995;17(5):605-631.
116. Williams GH. Chronic illness and the pursuits of virtue in everyday life. In: Radley A, editor. *Worlds of Illness: Biographical and Cultural Perspectives on Health and Disease*. London: Routledge, 1993.
117. Barnes MC, Buck R, Williams G, Webb KL, Aylward M. Beliefs about common health problems and work: a qualitative study. Under review.
118. Cornwell J. *Hard-earned lives: Accounts of health and illness from east London*. London: Tavistock, 1984.
119. Waddell G, Burton AK. *Concepts of rehabilitation for the management of common health problems*. London: TSO, 2004.
120. Wade D, Halligan P. Do biomedical models of illness make for good healthcare systems? *British Medical Journal* 2004;329(7479):1398-1401.
121. AHCPR. *Management guidelines for acute low back pain*. Agency for Health Care Policy and Research, US Department of Health and Human Services, Rockville MD, 1994.
122. CSAG. *Report on back pain*. London: HMSO, 1994.
123. Main CJ, Burton AK. Economic and occupational influences on pain and disability. In: Main CJ, Spanswick CC, editors. *Pain management: an interdisciplinary approach*. Edinburgh: Churchill Livingstone, 2000:63-87.
124. Sullivan MJL, Feuerstein M, Gatchel R, Linton SJ, Pransky G. Integrating psychosocial and behavioral interventions to achieve optimal rehabilitation outcomes. *Journal of Occupational Rehabilitation* 2005;15(4):475-489.
125. Main CJ, Phillips CJ, Watson PJ. Secondary prevention in health-care and occupational settings in musculoskeletal conditions (focusing in particular in low back pain). In: Schultz IZ, Gatchel RJ, editors. *Handbook of complex occupational disability claims: early risk identification, intervention and prevention*. New York: Kluwer Academic/Plenum, 2005:387-404.
126. Linton SJ, Gross D, Schultz IZ, Main CJ, Cote P, Pransky G, et al. Prognosis and the identification of workers risking disability: Research issues and directions for future research. *Journal of Occupational Rehabilitation* 2005;15(4):459-474.
127. Lindstrom I, Ohlund C, Eek C, al. e. The effect of graded activity on patients with subacute low back pain; a randomized prospective clinical study with an operant-conditioning behavioural approach. *Physical Therapy* 1992;72:279-290.
128. van Tulder M, Koes BW. Low back pain and sciatica: chronic. *Clinical Evidence* 2002;8:1171-1187.
129. Waddell G. *The back pain revolution*. Edinburgh: Churchill-Livingstone, 2004.

130. Krause N, Dasinger LK, Neuhauser F. Modified work and return to work: a review of the literature. *Journal of Occupational Rehabilitation* 1998;8:113-139.
131. McHugh M. Employee absence: an impediment to organisational health in local government. *The International Journal of Public Sector Management* 2001;14(1):43-58.
132. Baril R, Clarke J, Friesen M, Stock S, Cole D. Management of return-to-work programs for workers with musculoskeletal disorders: a qualitative study in three Canadian provinces. *Social Science & Medicine* 2003;57(11):2101-2114.
133. Torrington D, Hall L. *Personnel Management*. 3rd ed. London: Prentice-Hall, 1995.
134. Chu C, Dwyer S. Employer role in integrative workplace health management: a new model in progress. *Disease Management and Health Outcomes* 2002;10(3):175-186.
135. Michie S, Williams S. Reducing work related psychological ill health and sickness absence: a systematic literature review. *Occupational and Environmental Medicine* 2003;60:3-9.
136. Affleck G, Zautra A, Tennen H, Armeli S. Multilevel daily process designs for consulting and clinical psychology: A preface for the perplexed. *Journal of Consulting and Clinical Psychology* 1999;67(5):746-754.
137. Schwartz J, Stone A. Strategies for analyzing Ecological Momentary Assessment data. *Health Psychology* 1998;17:6-16.
138. Affleck G, Tennen H. Daily processes in coping with chronic pain: methods and analytic strategies. In: Zeidner M, Endler N, editors. *Handbook of Coping*. New York: Wiley, 1996:151-180.
139. Stone A, Schiffman S. Ecological Momentary Assessment (EMA) in behavioural medicine. *Annals of Behavioural Medicine* 1994a;16:199-202.
140. West SG, Hepworth JT. Statistical issues in the study of temporal data: Daily experiences. *Journal of Personality* 1991;59(3):609-662.
141. Kreft I, de Leeuw J. *Introducing multilevel modelling*. London: Sage Publications Ltd., 1998.
142. WAG. Welsh Health Survey: Adult questionnaire. Welsh Assembly Government. Available at <http://new.wales.gov.uk/topics/statistics/publications/health-survey200506/?lang=en>, 2005/06.
143. Tabachnick B, G., Fidell LS. *Using multivariate statistics*. 4 ed. London: Allyn & Bacon, 2001.
144. Green SB. How many subjects does it take to do a regression analysis? *Multivariate Behaviour Research* 1991;26:499-510.
145. WAG. Welsh Health Survey: Adult questionnaire. Welsh Assembly Government. Available at <http://new.wales.gov.uk/topics/statistics/publications/publication-archive/health-survey2004-05/?lang=en>, 2004/05.

146. Ware JE, Kosinski M, Keller SD. A 12-item Short-Form Health Survey: construction of scales and preliminary test of reliability and validity. *Medical Care* 1996;34:220-226.
147. Goldberg DP, Blackwell B. Psychiatric illness in general practice. A detailed study using a new method of case identification. *British Medical Journal* 1970;1:439-443.
148. EuroQol.Group. EuroQol: a new facility for the measurement of health related quality of life. *Health Policy* 1990;16:199-208.
149. Kessler RC, Barber C, Beck A, Berglund P, Cleary PD, McKenas D, et al. The World Health Organization Health and Work Performance Questionnaire (HPQ). *Journal of Occupational Environmental Medicine* 2003;45(2):156-174.
150. Layard R. *Happiness: Lessons from a new science*. London: Penguin Books, 2005.
151. ONS. The NS-SEC self-coded method. Available at [http://www.statistics.gov.uk/methods\\_quality/ns\\_sec/nssec\\_self\\_coded\\_method.asp](http://www.statistics.gov.uk/methods_quality/ns_sec/nssec_self_coded_method.asp). 2000.
152. Smith A. The scale of perceived occupational stress. *Occupational Medicine* 2000;50(5):294-298.
153. Griffiths A, Cox T, Karanika M, Khan S, Thomas JM. Work design and management in the manufacturing sector: development and validation of the Work Organisation Assessment Questionnaire. *Occupational and Environmental Medicine* 2006;63(10):669-675.
154. Stansfield S, Head J, Marmot M. Work related factors and ill health: The Whitehall II Study: Health and Safety Executive, 2000.
155. Koopman C, Pelletier KR, Murray JF, Sharda CE, Berger ML, Turpin RS, et al. Stanford presenteeism scale: health status and employee productivity. *Journal of Occupational and Environmental Medicine* 2002;44(1):14-20.
156. Morgan DL. Focus groups. *Annual Rev Sociol* 1996;22:129--52.
157. Hansson M, Bostrom C, Harms-Ringdahl K. Sickness absence and sickness attendance - What people with neck or back pain think. *Social Science & Medicine* 2006;62:2183-2195.
158. Parsons T. *The social system*. New York: Free Press, 1951.
159. Williams GH. The determinants of health: structure, context and agency. *Sociology of Health & Illness* 2003;25:131-154.
160. Grol R, Grimshaw J. From best evidence to best practice: effective implementation of change in patients' care. *Lancet* 2003;362(9391):1225-1230.
161. Black C. *Review of the health of Britain's working age population: working for a healthier tomorrow*. London: London: TSO, 2008.